No. 42.

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Field Book

of

Dr. Willis Linn Jepson,

care American School of

Oriental Research,

Jerusalem,

Palestine.

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Two Pounds!

- 1926 -

Berkeley to Atlanta, Ga.
1925

– Left Berkeley Dec. 22, Tork Sunset Limited at San Francisco. The last 40 miles before reaching Yuma showed interesting desert vegetation (as seen from train window): Fouquiera splendens; Olneya tesota, fine lots of this species, I think surely; this species Dalea spinosa, a plenty; Parkinsonia torreyana (Palo Verde). Ice went across nearly the whole of Arizona and all of New Mexico in the night. In western Texas I saw a sight I never thought to see again, a band of wild antelope. At least they were in very wild country, tho' doubtless protected by law now-a-days.

At Atlanta I was taken around by Eugene S. Heath, formerly

an assistant in the Botany Laboratory at Berkeley. He drove me along Peachtree Ave.: the home of Atlanta's millionaires: Asa Candler of Coca-cola fame; a physician who has become very wealthy through a liquid which he has invented for making kinky hair straight (all the negroes buy it, since they want to have straight hair); another man who produces Tanlac (one of the patent medicines, of which a number of very successful ones have Atlanta for their home station); and various other citizens.

Heath pointed out the trail which Sequoia followed down the ridge to a settlement of the Cherokees; and I was also shown the statue of Henry W. Grady in the city.

There are three colleges on the borders of Atlanta city which have, each one of them, a fine set of buildings of permanent character and of harmonious and pleasing construction: Agnes Scott College; Emory University, constructed of Georgia marble; and Oglethorpe University, built of Georgia granite. Bishop Candler is President of Emory University, which accounts in great part, at least, for the gift of seven millions from Asa Candler, who is a brother.

We drove to Stone Mt. It is a granite dome, a little reminiscent of Sierran domes. On the face of it is to be seen the beginnings of the figures which are to form a memorial to the Confederacy. The head of Lee is

complete and, it is said, one or two other figures have been removed by the new sculptor who replaces Borglum. Heath his sympathy is entirely with Borglum in the controversy.

It is bitter cold at Atlanta — a cutting north wind adding to the discomfort. The soil of Georgia to my eyes looked poor or sterile. It recalls vividly the gravelly red clays of the Sierra Nevada foothills. The negro cabins, set in the fields, without tree or fence or appurtenance near them, looked very forlorn. All the houses, from mansion to cabin, had one striking feature in common: they were set on foundation piers 1 to 2 or 3 ft. high; everywhere you could look under the building. It is much the same in the towns as cities. Heath said that the reason for this was because the rainfall is so great that unless there were free passage of air the lower story would be in such condition that things would mould!

The country — the whole of it — was covered by a woodland; which in large areas has been cut away for fields — but there is so much wild (or wild-looking woodland) that it interested very much. Of course I am speaking of the part that I saw — the hill country of north Georgia. The primitive or old woodlands have trees with tall erect unbranched trunks in contrast to our broad-leaf woodlands of California which have widely spreading or broad-crowned trees.

Washington, D.C.

— I was put up at the Cosmos Club through the kindness of Dr. J.N. Rose of the Smithsonian Institution. My window, the window of my bedroom, overlooked Lafayette Square and down through the trees I can see the White House. The club occupies the old Dolly Madison mansion with of course modern additions. There is a fine portrait of Muir in the main lounge of the Club.

I saw Chesnut and had a good long talk with him. He took me out to his home in Hyattsville, Md., for dinner. I saw his & his children — a boy and girl grown — fine good-looking types. He is the same genial cordial Frank

fellow as always. He took me to see Tidestrom, who was genuinely glad to see me — as I to see him. He, Tidestrom, has changed little. He is employed by the Bureau of Plant Industry under Coville's office to name plants for the U.S. Forest Service. He puts in all of his time naming western plants. Tidestrom took me to dinner at Ranachi's, the "Delmonico" of Washington — and we went to see a "movie" afterward. Tidestrom liked the picture so much that he wanted to sit through two performances of it — and I agreed because it would please him. I am sure it is his habit to do so. In fact he said so.

Tidestrom said Greene should never have left the Univer-

sity of California; that his experience at the Catholic University was not pleasant — that he was in fact "disillusioned". Tidestrom found the place uncomfortable on account of "such a lot of priests" and intimated that Greene did not enjoy them either.

Things are excessively crowded at the National Herbarium. They have not room or facilities for mounting all the plants that come to them; indeed, said Maxon, they must put into the duplicate pile great numbers of fine plants which are not really duplicates — duplicates only in the sense that the species is represented already in the herbarium by other specimens.

— Maxon took a great interest in showing me certain Selaginella material which he had worked over. He was truly interested in proving to me that the species as accepted by him were very distinct — as distinct as white oak and black oak, as he expressed it. The species of Hieronymus he does not value as a whole. S. bolanderi Hies. = S. hanseni, acc. Maxson. Says Hieronymus makes a great deal of the markings of coats of macrospores; but that these markings vary with age, lack of maturity, drying, etc. S. hanseni is near S. rigelorii.

J.C. Olin is a mining engineer who sends Maxson Californian material.

At the Cosmos Club I saw Shea

Palmer who revealed the very great interest he is taking in digging up biographic data on western naturalists. He has a lot of interesting stuff on Bridges and went to all the trouble of locating Bridges grave in Laurel Hill Cemetery. He also worked out the movements of Gambel, largely through data derived from the plants he collected. Palmer is indefatigable and will get much good stuff which used to be of great use to me in my proposed History of Botanical Exploration in California if he will let me have it as I doubt not that he will.

- Arrived in New York at 12:30 and went to the Hotel Manhattan. The next day, New Years Day, I went out to the New York Botanical Garden where I was given a very pleasant welcome by Britton and by Small. Dr. Britton is still energetic and is at the Garden every day, particularly on holidays and Sundays, they tell me. He is a small slender man with thin features rather. Small is stout and short and with a roundish good-natured face that represents a distinct type. He enjoys going over ground where others have worked and finding new species and genera on old things that they have left out. He has discovered 10 or 14 species of

Cactaceae left out of Britton and Rose's account. He took a great delight in telling about how he got various people fussed because he kept finding new things. I recall this as a foible of Small many years ago. He most kindly took me to New Year's dinner at his home where there was a turkey spread and a large family party. Small is now at work on a new illustrated edition of his Flora of the Southeast United States. He region west of the Mississippi he intends to provide for by another manual. He said that Mackenzie had telephoned him that my Manual was out and that it contained new ideas worth looking into.

In town New York, in the heart of the Wall street district, K. K. Mackenzie, the lawyer and sedge expert has his office. I now meet him for the first time. He says: "The Jepson Manual is the only manual which has clear and accurate drawings". Mackenzie is plainly very much impressed by the care taken with the illustrations. I told him of the pains taken with the illustrations; that I worked harder over them than the artist; that accurate records were kept of the material on which the drawings were based; that the drawing, while based on definite material, is intended to represent the prevailing or dominant type of the species; for

Manual it should not represent the artificial type, a drawing of which should be reserved for a technical or critical paper. Mackenzie was much interested in the distribution of Carex in California. I pointed out that lime or non-lime soils did not play a leading role with us, that water and temperature in connection with topography are all important. Carex is not found on the plains of the San Joaquin or Sacramento for four hundred miles in one direction and 60 in the other, except in specialized localities like the "bottoms" of flood streams; and that in the Coast Range foothills a species may be once found and not discovered

again or at least collected again for a long time. Mackenzie is much impressed with the number of endemic species which are found in Mendocino Co.

Today, Monday, Jan. 4, Mackenzie took me to luncheon at the Lawyers Club, which is in the top of one of the large buildings in lower Broadway. The Club is a sumptuously fitted one, with very elegant service. Mackenzie has a particular table where he sits. Near this table sits a lawyer well-known, as Mackenzie put it, for his whiskers, namely Hughes. But he did not happen to be there this day.

Mackenzie said: "The most intensive and progressive work in systematic botany is being done in California." This

statement interested me very much. I was also much interested in his query as to why there was such wide differences as to species in California; that such differences of opinion did not exist in the Atlantic states, that there was on the whole pretty general agreement as to species.

In reply I insisted that the matter was personal and physiological. I strongly insisted that there was just as much chance to split up species in the East, as in the West, as evidenced by Crataegus. Edward S. Burgess also worked on Aster in similar manner but as one can follow him. Mackenzie says that Small has abandoned attempts to keep up Bicknell's Sisyrinchium species in his new Manual and retains only five or six species. I did not so state to Mackenzie but I am certain that a great lot of the species splitting for California was done by various people desirous of making it "interesting for Jepson", the man who was trying to produce a Flora. It is possible to blockade a man by such tricks - if the man permits himself to be blockaded.

Mackenzie dwelt upon the importance of underground organs of the plant and their neglect by collectors, that species difficult to discriminate by their flowering parts may be clearly discriminated by their underground organs. He spoke of

Heller as being the premier collector in the United States, - as to quantity of material gathered, as to quality of specimens which were always of a high order, and as to field data which is always full.

[I saw Coville in Washington and had a talk with him. He remarked that California is the most interesting country in the United States because the relation between climate and plant distribution is so striking, the rapid change of topography is so marked within a few miles.

I also saw C. V. Piper who had much to say about introduced plants and their history. He thinks that there is no restoring the old primacy of the native plants in the Sierra foothills and

and that we better have a lot more introductions from the Mediterranean which may be spontaneous and useful forage plants.]

I was at the Botanical Garden on Wednesday afternoon Jan. 6. Small said that he had to farm out his proof-reading, that he couldn't be sure of the proof himself. One of the persons that he uses is Roland M. Harper whom he describes as a very keen critic. When Sargent issued the new edition of his Tree Manual Harper wrote him that he (Sargent) should be ashamed of charging $12 or $15 (or whatever is the new price) for a book with such a multitude of errors. Sargent immediately sent

Harper a new copy, asking Harper to annotate it and send it to him (Sargent), after which Harper would present him with the copy. Small describes Harper as tremendously energetic. Harper sent Sargent pages upon pages of closely typed (smaller spaced) matter — I think Small said 34 pages! (See also p. 460, v. 43.)

Small is busily engaged upon his Flora or Manual of the S.E. United States which is to have an illustration for each genus. His other Manual is to be called a Manual for the South Central States. Small deprecates giving time to mere talk when the printing press will serve instead. He said some persons had not discovered that the printing press had

been invented. It seems that when McDougall was here he introduced the idea of a weekly conference of the staff. Small considers this mere waste of time. However he took me to the meeting which chanced to occur that afternoon. Britton presided. I saw Howe (who is now smooth shaven — I remember him with a full beard); Gleason who has very prominent nose and eyes with a somewhat Semitic cast of countenance, and one or two others, including Stout. Harper of Columbia was there but left early. Rydberg was speaking when I arrived. He talked on a collecting trip in the Alleghany Mts. of the South. He spoke English very imperfectly, certainly very indistinctly; he was halting

and casual, and gave the impression that he had not prepared his paper in any orderly fashion, or at least not in a way to bring out the salient facts. He had an enormous number of small an detailed facts regarding each day's collecting on the collecting at a particular station - and was constantly thinking of other similar facts which he had not put down in his paper, and indulging abrupt digressions to bring them in. He gave the impression that he could go on forever in this desultory way and Howe whispered to me that he was very "long-winded." I found it difficult to hear him, partly because of his foreign accent, partly because of the monotonous, indistinct mode

of delivery and partly because of the barn-like character of the hall in which he talked. He is a much older man than I expected to see. He has white-gray hair, white moustache, white or white-gray goatee. His whole attitude was mild and gentle - and one contrasted this with the rather bold and militant and revolutionary tone and effect produced by this most formal systematic papers.

The Botanical Garden has apparently but one building outside the conservatories and greenhouses. This is a large somewhat grandiose stone building. The first floor is mainly a display of economic botany, the second floor of systematic botany, the third and top floor being devoted to

New York, Jan. 6, 1926.

the herbarium and the staff. Williams of Montana is working for a time at the herbarium. The lowest or basement floor appears to be display also.

I went across the Hudson River – a noble stream – on Sunday afternoon with Dr. Allan Carpenter, one of the old-time members of the Charmisso Botanical Club at Berkeley in the early days. We climbed up the sides of the Palisades through Liquidambar, Oak, Tulip and other trees – all of course like the ever-present Stag-horn Sumac, Leafless.

On Wednesday evening about 8 o'clock I boarded the White Star Liner Adriatic bound for the eastern Mediterranean countries.

At Sea, Jan. 12, 1926.

While there is no great alarm going the sea is roughened by a heavy swell which makes this huge vessel roll very uncomfortably. Yesterday afternoon was nevertheless a fine day at sea. The great waves following behind us, pushing us on, seemed tall enough to swamp the stern of the vessel but the vessel rode with the swell. The ridges of the waves were very high, the valleys broad and low – the great waves racing, the cumulus clouds making a grand scene with the sun lighting the sparkling sea between. The great ship rose and fell in a long graceful swerping motion under the powerful effort of the high seas. Gulls follow the ship,

though we are so far at sea. They measured, I should judge, 15 to 20 inches from tip to tip of wing. The wings are white with dark or black tips. The birds are mostly white beneath, grayish-white above. Dr. Bade calls them Stormy Petrel (!).

This morning early we arrived at the Madeira Islands. In the faint morning light the geometrical outlines of the houses on the slopes could be made out. The settlements are thicker and the population of Funchal greater than I had anticipated. By a little before 9 o'clock we left the ship's side, under a heavy swell, which made gaining the launch difficult. Bade and I wandered up through the

narrow streets of Funchal, paved with round pebbles from the sea-shore, pebbles set in cement and often disposed in geometric figures or simple mosaics. Garden walks, even slight steps are made in the same way. We went first to the house of the American consul, Mr. Lord. He said that the sugar cane plots which we saw were used to extract sugar for fortifying Madeira wine; the result is that Madeira wine is like a liquer or port. It is very strong. There are only two kinds, though there are a thousand labels. We pass in the narrow streets men heavily loaded with the sugar cane leafy stalks. These loads are used to feed cattle. All such men and many others, and many women and

boys go barefoot. In the garden of the consulate I see Heliotrope 6 ft. high, orange and many other semi-tropical things. Between the "flag-pebbles" there grows Senecio vulgaris and Sonchus oleraceus, while in a fertile band by the roadside Erodium moschatum, an old friend in California, flourishes. One of the finest gardens that we found is that of Reid's Hotel. It is right on the slopes overlooking the sea and very near the sea. It contains a fine lot of tropical things: Bombax, with the trunk armed with the heavy spines from top to bottom; an excellent lot of palms; tree ferns; and many broad-leaved trees.

Aloes with long spikes of red flowers grew here in the hotel gardens on the sea-cliffs. The cactoid-asclepiad, tall and branching, showed a fine example. Then there was a branched lilioid tree, freely branched from below, like an elephant tree, with a tuft of broad-grass-like leaves on the end of each branchlet.

Then there is a fine tree here, and in the streets, tall, broad round head, with smoothish or fig-like bark and a little-Cupressus-like leaves.

Another tree that becomes large is a Rhus or Rhus-like, with evergreen leaves ~~or evergreen-like leaves~~ and a panicle suggestive of Rhus laurina.

There are fine examples of Datura ——— with its abundant large white

flowers; shrubs 10 to 15 ft. h.

In the Municipal Garden there was Hibiscus, Colens, Lopat, Poinsettia, Cocos plumosa, Camellias, Araucaria excelsa which becomes a tall fine tree, Schinus molle; Strelitzia, Phoenix canariensis and Magnolia

The cultivated plants are Musa , Sweet Potato, Vitis vinifera and Sugar Cane and Pumpkins The latter are trained on trellis, with the fruits lying on the tops of the Houses

We also see Mimosa, Cesbrunus, Cupressus (lusitanica) and a conifer that sheds its branchlets like a Redwood. It is probably an Araucaria (see no.) and is very dense headed.

Euphorbia (no.), apparently E. Peplus grows

in garden walks, as also a Purslane. Platanus orientalis is a common tree along the streets.

All freighting is done on sleds pulled by bullocks or sometimes by mules. These sleds are also fitted up as "carriages" for ladies, with cushioned seats - and often painted or decorated gaily.

Motor cars are here - used by tourists or the wealthy.

Callas are grown and are sold to the tourists as a rarity - though growing freely as in California.

In the Municipal Garden I saw a low shrub, euphorbia, with the leafy stems ending in long trusses of small but brilliant dark-red flowers, five round bracts surrounding

the central "eye" or cluster of flowers. Bougainvilleas flourished on all the walls; and I saw one wall with Tecoma radicans. At the garden of Reids Hotel is a cactus tree, 15 ft. h. with main axis and many branches forming a rather narrow crown, the branchlets bearing small slabs or joints like an Opuntia. It may well be of the genus Opuntia — at any rate of that subtribe.

A wonderful Bignonia climber is used on walls and trellis in profusion. It flowers so freely as to make fine joyous masses of pale yellow flowers. The flowers are in close clusters — several to many in a cluster.

The sights in the streets interested me as always: milkboys with a bearing pole across the shoulders and a milk can/s at each end, with a variety of measuring cups hung on each. The shops are small and many are real shops, the articles being manufactured on the premises.

The harbor is a rather open one and in very rough weather it would not be possible to land here. The native population brought off all sorts of linen goods to sell, while boys in boats earned an excellent living by diving, not for pennies, but for the dimes and quarters which American passengers threw into the water from the

upper decks. We stopped at Funchal, the port, only from 9 to 5, daylight.

The most distinctive sight in the streets is the sled drawn by a yoke of bullocks, a barefoot boy guiding them by strings in the horns, or running ahead and clearing the way, a barefoot man sitting on the front of the sled with a goad and belaboring the oxen, both man and boy shouting and gesticulating and occasionally urging the dull bullocks into a short gallop.

The Madeira Islands lie near the Old World continents, nevertheless it took us two nights and a day and a half to reach Gibraltar. So that I have the impression the Madeira flora is sufficiently insular.

At Gibraltar we visited the town with its narrow streets thronged with the peasant Spaniard and with little carriages (drawn by a single horse) for hire. There were no taxies in our sense — though automobiles enough. The town is not especially interesting. It is filled with barracks for the soldiers and quarters for officers. It is called by Dr. Powers, the lecturer on the Adriatic, the world's greatest fortress — but to the casual stranger it did not look it. As to its fortifications they are wisely hidden, but its warehouses and shops are not as conspicuous as those of Mare Island. Gibraltar must be one of the dullest places in the world to live. There is a heavy and constant stream of travel

between the place and Algeciras, Spain, which is only two or three miles away.

Today (January 17) we are steaming eastward through the Mediterranean, the dark and lofty Atlas Mountains rising apparently abruptly from the shores of Morocco. When I think of the Atlas Mountains I am inclined to think of Cedrus atlantica which is there endemic.

We arrived in the Bay of Algiers Sunday evening and went ashore early Monday morning. The city rises in terraces from the bay shores to the hills behind. It has a decidely French aspect on account of its buildings. We went to the American Consulate, then to call on the Phillips, Olneys,
↑Edgar ↑relatives of the

or rather of Mary McClain Olney of Berkeley. Then to the Botanic Garden (Jardin d'Essai) which is Trabut's scene of work. The place is filled with tree bamboo, palms, Cocos plumosa, Ficus religiosa or Banyan Tree, and a good many other trees which I did not recognize. Araucaria excelsa does well in this garden, but is very open-headed. The Leguminous tree with the curious compressed elliptic pod, of which I secured spins in the Madeira Islands, is here developing into a fine tree. There is one very fine tree, or rather individual much larger than the rest, of Ficus religiosa which has aerial roots that have reached the ground and formed buttresses or supports. There is also a very fine avenue

of the regularly branched libiod trēe which has its branchlets tipped with tufts of Agave-leaves, the same as referred to above on p. 29. Bombax is here in good form. Ricinus communis. Platanus orientalis in the streets.

We had only one hour in the garden - all too little. It appeared to occupy about 25 or 30 acres.

Then we drove to Tombeaux de la Chretien, a curious pagan tomb easterly from Algiers about 50 Kilometers. The road is a very fine one and leads through a farming district along the sea which is very closely cultivated. Everything is very "trim" and neat. The buildings are all new and ship-shape; even the native

huts are very neat. There is no "old junk" or shabby or decayed or dilapidated buildings in evidence. One reason for this may be the scarcity of timber. It is a land in which building is by stone or concrete, with tiled roofs. The fields are mostly very small - small garden plots intensively cultivated - and always fenced off with reed-barriers or fences as windbreaks. The reed is grown on border lines to furnish a supply for these woven fences. It is now past flowering with the old panicle standing erect like old plumes of pampas grass. Everywhere are vineyards, grown and pruned as we do in California.

The tomb we come to see crowns a hill overlooking the mediterranean sea. It is roundly conical and made of

huge hewn blocks of stone. We followed an arched passageway which runs entirely round the circular monument and ends in a sort of burial chamber which seems near the center but is much off center. The passageway is about on the level of the ground. From this hill one can look over a fertile valley plain which lies between the low coast hills and the Atlas Mountains behind. It is an extensive area of farming land. Along the coast on sandy spots grows little groves of a low pine - 2 needles, small narrow pedunculed cones which persist on the tree a long time. There were a few other species of low trees with them - trees with broad leaves.

Here in Algiers we saw great numbers of Arabs dressed in their usual garb, the women with the face veiled. As far as my inspection could discern they had no beauty to hide.

Mr. Philips had at one time for a period of ten years a farm in the plateau country. It would have been highly profitable to raise table grapes for the Algiers market - since they will come in 2 or 3 weeks early - but the Arabs eat them up. Their appetite is insatiable, their capacity illimitable. When the rare occasion comes that an Arab can eat all he wants he goes to it - not for pleasure, not to satisfy appetite - but to fill up like a camel for a long period of famine.

Monaco, Monte Carlo

Jan. 26.

From Algiers we steamed to Monaco. Having been here before I had not so much interest in the place — but in the old town with its narrow streets there is interest. We went to the Anthropological Museum with its displays of the culture of the cave men of southern France, — including the Dordogne. But far more interesting is the Hydrographic Institute, the most complete exposition of the life of the ocean which I have ever seen. Its skeleton of a great whale (?70 or 80 feet long) was very impressive. The giant Crabs from Japan are also very remarkable. All sorts of ocean life was represented from seals to porpoises and sharks and octopi.

Very remarkable is the aquarium — a large and very fine collection of fishes and anemones and crabs and so on. Each collection seemed perfect of its kind and all are exceedingly well cared for and excellently displayed.

At Naples the sky was overcast but Vesuvius shrouded up in the afternoon with huge clouds of smoke drifting off from its crater. The day was dull mostly and no day for the appreciation of Naples such as I had before, when here. I vastly enjoyed the scenes in the narrow streets and the scalita or staired streets — the little shops, the cheap goods, the beautiful flowers — so wonderfully and tightly arranged — displayed in the street wall — every blossom

perfect and flawless, of exquisite colors — all this just above the mess and mud of the narrow way — for it has been raining — and all is sloppy below.

Off the toe of Italy, the mountains as one sees them from the ship appear to rise very high — they are snowy ranges apparently 10,000 ft. high. I have made the drive along the coast from Amalfi to Sorrento but one gets no idea of such mountains. The sea is running high this morning and the waves break into high veils of foam. When the sun shines there right the rainbows come and go delightfully with each wave. It is one of the prettiest spectacles I have

seen. Across the "mouth" of the Adriatic Sea the ship has a rough cold passage. Next morning we sight the Peloponnesus and coast along it on our way to Athens. I pick out the thrilling headlands or landmarks as well as I can: Marathon; Argos; Salamis. And finally many miles distant across the sea the Acropolis comes into view — the most awe-inspiring sight for the man of culture that this earth affords.

We climb up to the Acropolis hill, after reaching Athens, but are told at the Propylaea that the entrance fee since Friday is $5.00! We try to buy a ticket but find we cannot. It is Sunday! Meanwhile the native Greeks and every ragamuffin

streams in! Both Bade and I are highly indignant but it does no good. I content myself with the Odeon Theatre the Theatre of Dionysius, the Temple of Zeus and the Temple of Theseus. The standing columns of the Temple of Zeus are certainly very remarkable. They are made by blocks 6 ft. in diameter and about 3 ft. long set on one another. These joints are joined so perfectly - without cement, - that you cannot anywhere thrust a needle between them. It is very wonderful. They are fitted to each other by a bronze peg, or each side, set about a foot from the edge, the pegs being about six inches long.

The columns are corinthian.

At the Temple of Theseus one finds an almost perfect relict of Greek architecture in the sense that the main structure is still there. It is doubtless the most beautiful building in the world - from the standpoint of architectural perfection.

We came to the Temple of Theseus through the narrow streets of the old city - soil which must have been trod by Demosthenes and Socrates, by Plato and Aristotle. The very stones which my feet hid on the way to the Propylum were trod by Phidias and Pericles.

The passage of the Dardanelles was made about 11 o'clock in the morning. The passengers looked with great interest at the gloomy lowlands of Gallipoli where so many Anzacs lost their lives in the war. The shores grow bolder as we run in and narrow perceptibly until we reach the narrowest part, the Hellespont, where the headlands are fortified, though these are low-lying. Then the channel enlarges until we are in the Sea of Marmora. We reach the Bosphorus about ten o'clock and anchor off Galata at Constantinople. The next morning the shores of Europe and Asia lie before us. The city of Constantinople lies on low

hills which rise soon from the shores of the Bosporus and the Golden Horn. Everywhere one can see the minarets of mosques rising lightly high in the air. We go ashore at 8:15, reach the Palace Hotel and are met by Dr. Gales, President of Robert College, who takes us in his machine to Stamboul, the part of the city lying west of the Golden Horn which contains the larger number of mosques and the Museum and various other public buildings. We go first to the Mosque of St. Sophia - the most remarkable of the world's buildings after the Parthenon. When one stands in St. Peters at Rome, one knows that he is in a very remarkable place. But the only way in

which he can look up into the dome is by standing under it and looking straight up. In order to see it effectively one nearly breaks his neck bending backward. At St. Sophia we have a most remarkable achievement in architecture. Two half domes opposite each other support the central dome which crowns them and is supported on the two other sides by walls. The result is that from the moment one steps into this grand edifice he can see easily to the very top of the high dome and there is an amazing effect of lightness and grace. At the four corners beneath the central dome one sees a representation of the seraphim - symbolic -

for though there are six wings there is no representation of a body. It is thought this is the more effective.

One wall near the floor bears a frame with the legend in turkish: Hasten to pray before eating. On the opposite wall: Hasten to repent before dying. It is impossible for me to describe the effects of the mosaics or the grandeur of this building which was built by the Emperor Justinian. The architect failed in his first attempt with the great dome; but the emperor trusted him and had him start all over again, clearing away the fallen walls. The device used by the architect is very simple - like nearly all great things -

only no one had ever thought of it before! When once it was conceived, then it seemed very simple. I was to show a time in this great structure to grow up to its magnificence or appreciate truly its wonder.

Thence we went to the Museum - one of the most remarkable collection of antiquities in the world - the most remarkable probably from Asia Minor.

There is the famous cylinder of Sennacherib. There are the sarcophagi from Sidon. One of them is called Alexander's tomb. The frieze of sculpturing are most marvelous. The action of the horses and men is wonderful. Originally all such sculptures were colored. Evidences of the original coloring still appear on one end of the monument. There are other very remarkable sarcophagi.

Babylonian antiquities are richly represented. There is a life-size figure of a god with the two rivers of the Tigris and Euphrates. In one hand he holds an inflorescence of a date with which he is fertilizing the date foliage. The whole symbolizes fertility.

In another stone panel we have several figures in a river, riding in a "canoe", made of reeds bound together.

There are many tins of ancient tablets. One of these represents an order by the King of

Babylon relative to the residents building their houses a certain distance back of the street!

Our conductor - a research scholar and curator - shows his humor at certain points. A figure in one of the old sculptures, (a large stone panel, bore a head dress something like a turban. Said our Curator: It is lucky the Angora government did not see this hat; they would have mistaken it for a turban and ordered it struck off!!

It is impossible for me, who am no archaeologist to give any idea of the riches of this Museum. It is - all of it - well displayed, admirably arranged!

We were next taken to Robert College which has a most magnificent situation overlooking the Bosphorus. Just below the school are the old fortress towers built by in ; they are the Towers of Europe - two of them connected by a wall, and meant for the subjugation of Constantinople. On the opposite shore is a similar set of towers, The Towers of Asia. Just above the Towers of Asia is a valley - narrow and low, - running back into the country, the stream in its bottom being The Sweet Waters of Asia.

At Robert College we were entertained at luncheon by President and Mrs. Gates. The college has half-a-dozen fine stone buildings and other smaller ones. Its engineering laboratories were shown to us with great pride. The

infirmary is well-equipped and beautifully ordered. The doctor in charge is Dr. B. V. Milford Post, son of the botanist Dr. Post. This Dr. Post is also deeply interested in botany and is Curator of the Natural History Museum. He showed the herbarium, which is well mounted and well ordered, with great pride. He collected in company with his father and has made an expedition to the summit of Mt. Ararat, 17,000 feet. I was much struck by the resemblance between certain alpine plants that he showed me, such as Draba , to our Sierran alpine plants, as Draba Lemmonii. Dr. Post is editing for publication the manuscript of a Flora of the

Bosporus written by , a Syrian merchant, who was intensely interested in the native flora, and whose herbarium is now an important part of the herbarium of Robert College. Dr. Post is also planning to get out a new edition of his father's flora of Syria and Palestine.

The Natural History Museum has an excellent collection of birds and fishes. Dr. Post's full name is Dr. Bertram Van Dyck Post, Robert College, Constantinople.

Many many nationalities are represented in the college but mainly Greeks, Armenians, + Bulgarians apparently.

Thence we went back into the city. I had the pleasure of hunting out the bridge over the Golden Horn and

walking to the middle of it and surveying the splendors which are visible from this point – I counted no less than 11 magnificent mosques. Besides there was the play of life in the Bosporus and the Horn itself – the small craft, the fishing boats with their curious sails, the strange merchandize, the tide of asiatic humanity across the bridge – all this seemed to tell me I stood on the threshold of the opulent and colorful East.

One thing always stands out in the East – the cheapness of human labor. One sees occasionally in the narrow streets a team or span of buffaloes with their curious curved horns – but not many. Not

many horses either. The chief freighters are men. These men carry enormous loads. They have a sort of straw pannier or pack which fits the middle of the back. The packing box of mdse. lies on this and the shoulders. Bending over like a true beast of burden they move through the crowds which fill from side to side the narrow streets, balancing with the utmost precision the load whatever it be – a huge box, a bale of hay, a straw hamper of fruit, an article of furniture and so on. Some of the burdens seemed very heavy. Dr. Yates told me that he has seen an upright piano carried in the streets in this way. These burden bearers often move in strings like our loaded pack mules in the West. These men

appear to require a stooped or horizontal position for the body.

In the garden at Robert College is a young Redwood tree - Sequoia sempervirens - about 16 ft. high. It is in a flourishing condition.

We went to the American Embassy and had five minutes with the United States High Commissioner in Turkey, Admiral Bristol. We had no business to transact but Bade had a card of introduction from Commander Ringgold. For myself I should rather have spent the time on the Galata Bridge over the Golden Horn. I had one minute on the bridge but in that minute I drank in the whole scene like a prophet in a vision, like an epic poet. Transfigured for one moment

by a rare vision: the strange nationalities, Cossacks, Kurds, Circassians, Greek priests, Turkish drovers, Syrian peddlers, Armenian merchants - a perfect Babel of voices; the curious vehicles, wagons drawn by Turks, carts pulled by buffaloes and other strange street craft. Up stream stretched the Golden Horn while westward towered scores of airy minarets. I could have spent hours saturating myself with this colorful scene - just idling away the hours and studying the tide of humanity, the bizarre flow of nationalities. It is, to me, grotesque to spend only one day in Constantinople!

Last night we left the Bosporus on our way to Haifa. This morning we pass between the islands Psara and Chios and are soon steaming through shimmering sunlit seas with the Sporades on our left and the Cyclades on our right. And so begin I to recite Byron's poem:

The Isles of Greece, The Isles of Greece!
Where burning Sapho lived and loved,
Where grew the arts of war and peace,
Where Delos rose and Phoebus sprung.
Eternal summer gilds them yet,
But all except their sun is set.

A little further along, rounding the southerly point of Nixaria we come in sight of the island of Patmos. At a great distance it appeared to have snow on its highest point; later it seemed as if this high point were broken and tumbled chalk

rock. Later the point took on form and I could make out regular rows of white dwellings on the slope, crowned by a citadel, with an apparently fertile slope running down below it to the sea. It is not, as I see now, the highest point, but lies like a little hill on a ridge between two higher hills. The effect is a good deal like a Maxfield Parish picture! This island was used by the Romans as a prison and here they brought St. John and on the island the Apostle wrote the Book of Revelations.

We pass the Island of Rhodes where once stood in the harbor the great statue of Apollo – the Colossus of Rhodes. And the whole of the next day, Jan. 28, we steam through the eastern Mediterranean, an open sea, with occasional far glimpses of land northward. At 9 oclock we reach Haifa harbor

Early this morning I looked out on the long ridge of Mt. Carmel, rising above the Bay of Acre and the town of Haifa. Away to the north I can see Acre behind its walls built into the sea. It was a strongly fortified place and some of Napoleon's cannon are still there as relics. Away down in that general direction is the Lebanon range.

I went ashore at Haifa in order to dispatch two pieces of luggage to Jerusalem. After getting through the customs (three piastres) my luggage was shouldered by a Moslem and carried to the railway station, I walking along with him. At the station I received a half of a receipt (cut in two in the middle) and paid about $1.60. Having disposed of my luggage I went to the Ottoman Bank but found they had closed;

between 12 and 3 they close daily. So I gave myself up to the street scenes in the narrow streets of the old town. What a revelation of Eastern life! For the first time I am in a truly Oriental town. For Constantinople is in Europe and is really a mixture. But here one feels the Old East he has read about, here in life, in living flesh and blood, are the types familiar in pictures all one's life. One recognizes them instantly and yet there is so much more than is in the pictures! there is a quality, an essence, a character, a reality, an aroma, an atmosphere — ah that is the word I want! — let the word aroma stand — for the East has its own peculiar smells — but there throngs in the streets

almost intoxicate me with a sense of the East. Veiled women, women, darkly veiled and dressed, move silently along the narrow ways; fish hucksters shout at the top of their lungs; cabriolet drivers and mule leaders shout even more loudly to get their vehicles through these streets crowded from side to side and so narrow and irregular; mechanics make an infernal racket in their shops which open on the streets; a company of Syrian prisoners guarded by gen'd'armes goes briskly by — almost as if they were a small company of infantry, but I notice that they are chained by the wrists in twos and that they have a cotton uniform with large dull white and black checks;

a vender stands behind a little brazier against the street wall and roasts chestnuts (oh, so tasty, hot, — a heaping handful for half-a-piastre, that is 2½ cents!); a dense line of beggar women squatting along the walls from the temple gate towards the mosque, and looking down this vista I can see hundreds of Moslem worshippers — for it is high noon — prostrating themselves toward Mecca, the grass of supplicants rising and falling in unison like a wave; the throng now pours out from under the high tower into the crowded street and each beggar woman rises and holds out a palm beseeching the worshipper to give; prosperous merchants appear here and there, if Moslem, wearing a fez; hundreds of fellahin in their rags — ah rags — why I

never knew before what wore rags - the most amazing assortment of rags that one can imagine; priests in their vestments; scholarly men in Arab costume; uniformed nonchalance of the Palestine police; all sorts of artificers plying their trade and all sorts of petty peddlers crying their wares. But I come back to the rags - the ragged garbs of the fellahin - and concede the picturesque aspect of these peoples of the streets and bazaars. A western man in utter rags is offensive to us; the oriental wears his rags in a different way, with a certain native ease, sometimes even grace, that makes so much difference, for in addition there is always the element of color in this

garb and in this background; Abyssinian negroes with nearly straight hair and a peculiar metallic lustre to their black skins; clean well dressed Germans who have a quarter or compound of their own without the city walls; lively quick-speaking Frenchmen; sober young advocates with leather brief cases under the arm - all busily coming and going or idling or gossiping in the narrow ways; while everywhere the eye is engrossed by street signs in four languages: Arabic, Hebrew, English and German. The Oriental loves color and this element lends an air of novelty to the scene. I do not yet know at all the significance of the various garbs, especially the head dress, of-

the Mohammadans. Many wear a red fez; this is worn with Mohammadan dress or European dress. Many wear a turban of various sorts; it may simply be a cloth band, or more or less ornamented; or there may be a cloth head covering with one or two cloth-covered rings crowning the head; or this latter dress may be very elaborate and indicate an Arab of rank. Many of the lower classes are barefoot. All the common sailors are barefoot. Life goes on in the open. The artisan works in the door of his shop. There goes a priest of the Greek Church. A large covered coffee-place on the street is filled with Arabs drinking or mostly smoking through

tremendous water-flasks that sit on the floor, and playing games: backgammon, dice or dominoes. I pass several times a beggar with uplifted hand at the harbor gate by the city wall and did not realize that he was there at first, so completely did he melt into his surroundings.

For one thing I was instantly conscious that I was an alien. No Arab nor Syrian Mohammadan nor Negro Mohammadan looked at me save with eyes that told they belonged to a world that was separated from mine by a gulf filled with the waters of age-old bitterness and fanaticism. It was a strange and new but deeply stirring sensation and the depths of my nature as a western white man was shaken as they have seldom

been in my life. How powerful was this feeling was shown by the fact that all Europeans — as a reaction looked alike. I had occasion to inquire my way frequently and on speaking to a man in English or French I would find that he was German, or vice-versa.

A camel-train passes through the narrow street, the great camels having an air of being perfectly superior to it all or even much bored by it. An arab goes (cont. p. 74)

We sailed from Haifa at 5 p.m. and the next morning by nine o'clock were in sight of the Delta of the Nile, the fingers of the Great River spreading out into the waters of the Mediterranean. We steam around to the west and enter the inner harbor of Alexandria and anchor not so far from the quays. The harbor is filled with deep sea vessels and with the smaller craft of the Arabs. These small boats with one mast and a triangular sail add an oriental element to the life of the harbor. One which is handsomely fitted "shows off" before us. It cuts down the wind straight for our great ships, curves gracefully around with the light smoothness of a bird and repeats the performance. An Arab fagir edges through the crowd of passengers and gives an exhibition of his skill. Live chickens appear, walnuts, coins and so on and disappear, are multiplied and subtracted with a perfect flawlessness that defies the eye and makes the Western sleight-of-hand appear forced or crude indeed.

There was a long delay in getting ashore and through the customs. We had the usual experience with native porters and guides. A guide was bargained with to take us to the hotel for ₤1.50, when we were through the customs the carrier stopped and he demanded ₤ ₤1.50 more for the hotel, saying that the bargain was for the custom-house. We compromised by paying ₤2.50 and then 5 piastres more to a second hotel and finally landed at the Hotel Windsor, a clean and well-fitted place, the charges moderate for Egypt, ₤2.50 for room and breakfast.

As usual I found great delight in the street scenes, the strange foods marketed on huckster carts in the streets

and the great variety of oriental costume. The foreign merchants are numerous and appear to be chiefly French. A very solid-looking building in the very heart of the city is marked "British Garrison". St. Mark's Church (English) is a solid edifice in the heart of the city with ample ground; it is well decorated; and is one of the signs of the permanency of the British hold on Egypt; for this church was built over 80 years ago I think. Jan. 31,

Early this morning I opened my balcony window and looked down the street. A group of Arabs were coming, walking with a smooth flowing grace that is peculiar to them and foreign to us. A street huckster carries a great flat or tray-like basket of breads and foodstuffs

on his head. The loaves are stacked on the edge of it, the circular loaves held by a little post — and this structure balances on his head, even spins slowly at times, while his hands hang by his side!

The street scenes absorb me all the time I am here. The signs are chiefly French when not Arabic. The names of hotels and shops are likely to be English — but one never finds an English proprietor; it is a name for business reasons!

We go on to Cairo. It is a wonderful picture of intensive farming — this Nile delta — with the life of the people everywhere before our eyes. There is no privacy to speak

of — none at all in the country side. There are no trees, no barriers, no fences or walls. The land is divided or checked into little plots 60 x 20 feet, varying up to areas of 1, 5, 15 or 20 acres. Plowing is done with a forked tree to which are attached a yoke of buffaloes. Asses are used as burden bearers and for very large loads camels. Two-wheeled carts with large wheels and narrow body-boxes are everywhere in evidence and also small 4-wheeled wagons with similar narrow bodies. Huge sacks of cotton are taken into the market place on a camel, one on each side. When the donkey or ass has delivered its load the owner sits on the forward part of the saddle and pummels, or if the donkey be naked, for back on the loins. Everywhere were green fields

with other fields between being planted. Everywhere groups of peasants working in the fields plowing, cultivating, sowing. Everywhere were a few animals, but only a few at a time, buffaloes and donkeys, feeding in the plots but always staked by a rope or tether, or herded by a herdsman. Rarely one sees a small flock of sheep with a shepherd, the fleeces dark brown, the heads of the sheep dark-colored.

All the fields are bordered by irrigation ditches. The water is lifted out by a wheel, which has a wheel with cogs which fit into a horizontal wheel with cogs which is turned by lever set into an upright tree, the tree forked at the top and carrying the lever, the motive power being supplied by a buffalo that moves in a circle. The blind-folded whole device looks (and doubtless is) extremely primitive. The timbers, stakes or posts are made from unsawn trees. The whole human population appeared to be very busily at work or going somewhere along the rights of way. I saw no roads, in our sense, but only narrow dirt passageways, in no way looking ancient, between the fields. There was as I say an appearance of great industry. The primitive Buffalo plow team moves slowly but the camel train moves rather rapidly - though you get a contrary impression if you look at the legs only. The crops consisted of wheat or some similar grain, horse beans, and clover, and perhaps alfalfa - but I was not near enough to be sure.

As we went on the trees increased in number, though always scattered and never making a grove. Though the date trees sometimes make a real grove. Some groves of dates must be very old - since so very tall.

No peasant lives on his land apparently but all live together in little villages of mud houses or brick huts. They stand closely together. There are no gardens attached to them - because the village occupies very little of the valuable soil space. Everywhere one sees women with water jars on their heads, or sometimes other burdens. The women work in the fields as well as the men. The man plows attired in his gown which reaches to his shoe-tops, or he may be - and most often is bare-foot. The

villages look very unclean and unattractive in every way. They suggest some sort of animal or bee hives - but not nearly so neat as an animals. One sees wonderfully well the life of the people; man going to market with loads of oranges, produce and green hay.

We arrive in Cairo. The first day, or what remains of it, is largely spent in getting settled in a hotel. The second day is largely spent in doing nothing - except that in the afternoon we take tea with Professor Breasted, the Oriental scholar, at the Hotel Semiramis. He has a manuscript from the tombs of the valley of the Kings which is of 1700 B.C. It is a treatise on anatomy and shows the author of it to have been actuated by a scientific spirit. A man falls from a height; his 5 cervical vertebrae (he knows there are 5)

are crushed together in each other so that the man's legs are paralyzed. He says nothing that is known can be done for this – but he records as a scientific observer what he has seen. A man's skull is crushed and he reaches his fingers in and does every-thing to relieve the pressure. He describes the convolutions of the brain, likening the surface appearance to the appearance of melted copper when it cools. He gives or rather uses a word for this structure, "the brain", and Professor Breasted remarked that there for the first time he was standing in the presence of the word "brain". A great many words never met before are found in this earlier MS. (in later mss.) The word is used a half-dozen times it is possible

to get at its meaning. If it is used only once it may not be possible or even be possible. The ancient author speaks of the voice of the heart as being heard in every part of the body! He says of a certain case, that having done all that is possible, it is now necessary "to give the patient a rest, stop medicine and let nature take its course". The expression just cited with quotation marks is not the phrase as Breasted said it. I cannot recall it exactly. Doubtless it can be found in the publication of the ms., which is now being published.

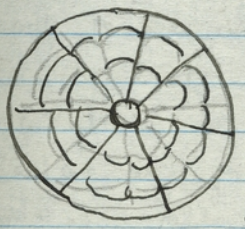
Dr. Breasted speaks of a very remarkable collection of plants taken from the tombs; now on exhibition in Chicago U. Oriental Mus.; a printed list of determinations by a German botanist.

Cairo, Egypt

Today, Feb. 3 we went to the Museum. It is a perfectly astounding collection of Egyptian antiquities and enormously impressive the moment one enters the central hall. These stone monuments and figures are huge.

We went at once to the Tutankhamen collection. It is far more splendid than I could possibly have realized. The sarcophagus of the king is a marvelous work of art: The decorative work is all beaten gold with fine designs and symbols.

Tutankhamen's chariot is very remarkable. There is a medallion or circular jewel on side a little like a scarab. The reticulations and boundaries of the figure



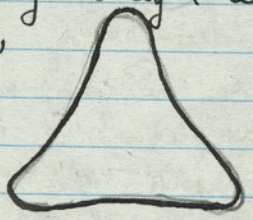
are in gold, the areas filled in with blue, purple, brown and lavender inlays, making an ornament with its central jewel about 3 in. in diameter, wonderfully chaste and delicate — and not looking in the least as if 4000 years old. The yoke of the chariot is bound with gold filagree bands. Harness parts are covered with gold. The urns and stands are of most clear and beautiful alabaster for holding plant perfumes. These — or some of them were

found sealed with wax. When the seal was broken there was a distinct odor of the perfume.

The King's loving cups is here. It is of alabaster and of graceful outline. (Compare the loving cup of in Exodus.) One set of cups is of the Lotus pattern, two smaller cups flanking a large central one. On one of the "cups" or flowers the petals of the Lotus show particularly well. This piece is very delicate. On one of the funeral urns there are wonderful drawings of a bull attacked by a lion with a dog below. There is also a "little horse" sheathed in gold; it originally contained a little gold statue of the King, but the box was looted some time after the memorial ceremonies.

Tut's throne chair is as wonderful and magnificent a piece of art as it has been described as being. On the back of the chair is a figure of the king in full regalia (the body ~~blue~~ magenta), with the queen anointing his body. She is in full regalia and also has a magenta body. The gold lion heads on the arms of the chair are extremely natural and life-like, that is to say, they are truly artistic. Above the figures of the king and queen is a sun, with the rays stretching down hands. The chair behind has a wonderful Lotus bloom flare in gold. The serpents' heads have sun-disks. The lapus-luzuli inlay is everywhere remarkable. On each side the chair is a bird with out-stretched wing. — that is an ornament to the arm.

There are papyri documents. One of these shows a drawing of lotus in colors. Some of the columns or pillars are steles of lotus, that is to say designed after a sheaf of lotus. I saw some loaves of bread; the wheat grains showed in them and explains why the ancients had good teeth, for such coarse bread is better than a Tooth-brush. These loaves are of the XIth Dynasty. They are triangular, so,



One sees everywhere in the streets loads carried on the head. Such burdens demand an upright carriage of the body. One notices a large number of men who have a surprisingly erect carriage, often with the head thrown a little back. They - these people - have been carrying water-jars and such things on their heads from far back, because one sees such figures on the monuments. The street urchins often have a marvelously erect carriage - a certain actors grace with the head and shoulders thrown a little back.

[cont. from p.72) by seated on a tiny ass whose trot is brisk on the stone pavement. He leads a loaded camel. The camel's feet are moving very slowly as compared with those of the ass, but the stride of the camel is so long that it takes a great many steps of the ass to equal one of the camel - and the two move along as if perfectly attuned to each other.]

The donkeys or rather asses are often richly or even sumptuously harnessed. All this is for good-luck, talismanic effects, or in the case of particular ornaments for the purpose of averting the "Evil Eye". These little animals are very tough and when being ridden go at a brisk trot.

- I went to call on Dr. Samuel Zwemer, Editor of the Moslem World. He gave me the name of W. C. McQuesten, Professor of Biology at the American University, which is Sharia Kasr el 'Ain, not far from the Egyptian Museum. The next day, Feb. 5, he (McQuesten) took me to the Royal Society of Agriculture (Societie Sultanniene de Agriculture). The botanical staff consists of:

R. S. Sennit, a Britisher -
W. J. Luggard, a Hollander -
Wilcox, a Britisher

Sennit took me around at first. The Society is putting up a new building on the island in the Nile near the Egyptian Museum. This building is to furnish room for a

permanent agricultural exhibit which is to serve largely the purposes of popular education in agriculture. Various agricultural reforms cannot be instituted as long as the population is very backward.

One exhibit is to show the whole history of the cotton plant, agricultural growth as a crop plant, breeding experiments and selection work, harvesting of the cotton, manufacture of cotton, cotton products, cotton by-products, related products.

The most successful and widely grown cotton in Egypt is Sakellaridis. Another cotton which is widely planted and has high promise is the

Maarad. This is derived from Pima seed. Pima in turn was derived from Egyptian cotton. Seed of Egyptian cotton was taken to the United States and instead of coming true or producing uniformly it went to pieces under the changed environment. After four or five years selection the Pima Cotton was derived or rather segregated by selection, by T. H. Kearney of the U.S.D.A. Pima Cotton was then brought to Egypt. Similarly it went to pieces under the changed conditions and did not make a good or uniform yield. After several years selection Maarad Cotton was segregated. It has a shorter fibre but is stronger.

Egyptian farming supposes 4 or 5 crops a year on the land. The Nile valley is to a great degree at this time filled with Berseem Clover; when this is taken off, then a new crop is immediately planted, a crop of another kind.

The Cotton crop must mature by July 31. Any variety which takes a longer period the fellahin does not want to plant.

- Cont. from p. 118.

Fares, railway.

Cairo to Kantara ... 61
Kantara to Jerusalem .. 314.50
Kantara to Jerusalem, 1st class 42.7
" " " Sleeper 135.

?—— = ? ?
piastri = 5c. about

- The conservatism of the fellahin in agricultural matters is notorious. Often there is sound reason for his conservatism. He is used to planting Baladi Wheat. This wheat has a less yield than Hindi Wheat, which it was thought to introduce in its stead. However the straw of the old or Baladi wheat is eaten by the cattle of the fellahin; this new straw, the straw of the Hindi Wheat is scarcely touched by cattle. The matter is a puzzle. Chemical analysis shows the two to be exactly alike! There must therefore be some physical difference.

- The exhibit of plant pests is very interesting. It shows various stages of the pink boll worm, the ear worm and so on. This exhibit is being worked up by Wilcox who is the entomologist of the Society.

- The plant breeding work is done by Wm J. Lyegard. He conducts his selection of cotton plants on an extensive scale. That is he works on a large number of individuals and of "families"; because he can use cheap labor in recording the counts of his plants in the seed-beds for various characteristics. He employs some forty or fifty native young men, who have some education, for this work. On account of labor costs such extensive counts would not be possible in the U.S.

– We went to the Pyramids and entered the great Pyramid to the tomb chambers. The Pyramids are very impressive on account of their setting but I think it would take some time to grow up to a full realization of their size and significance. The Sphinx has undoubtedly a strange questioning countenance and has impressed the world more than the Pyramids. We had some good Munich Beer at the Mena House at the foot of the Pyramids

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– Awareb – small sail boats on the Nile.
Maratib, pl.
Machib, sing. } larger boats.

– The Zoological Gardens at Cairo are a real treat. The collection of birds is very fine. The birds from the tropics, parrots and so on, have the brilliant or metallic coloring associated with tropic birds. The primates are well represented. Baboons can catch objects thrown to them. They and other species with great ease use their hands in eating in a way which no other animal does but is highly suggestive of man. The ears of some of them are quite destitute of hair. Their toes are very like human fingers.

I enjoyed seeing the mammals: water-buck, llama, gazelle, ibex, lions, tigers, hippopotamus (like an overgrown pig), jackal and various strange herbivora from South Africa.

– I visited these gardens several times. See p. 200.

-There is a small bird here on the dry sandy flats back of the river bottom which is very similar to the Horned Lark of the Solano Co. plains, but the markings are different. The size is much the same, and shape, but there are one or two white tail feathers on each side of the tail brush. The female has no crest; the male has a central erect crest. His life is single on the ground.

The Hoopoe is a very remarkable bird. It is marked with white, black and red-gold in very gorgeous pattern and is suggestive in its flight, movement and general appearance of a woodpecker or rather a yellow-hammer. It has a long curved bill with which it digs in dust, sand and loose-soil

for its food, probably insects or grubs. It works on the ground but does not live on the ground. We noticed it first on the great gate or pylon of the Temple of Amenophis II. It was uttering its note, 3 soft sounds, a little owl-like, in quick succession, seated on the topmost stone.

On the great pylon, at the corner a hawk has alighted. It is so high above us that it has no fear. It may be taken as a symbol of the unchanging East; for amongst the inscriptions below it is one of the symbols, the falcon symbol, which is is used so much.

In the narrow street is a flour mill. The fellahin bring their grain to be ground.

Luxor, Feb. 9, 1926

– We went this morning with donkey drivers to the Valley of the Kings. Our departure was early and we managed to arrive before the vast crowd of tourists which now fills the place. We had a good look at the Tomb of King Tutankamen. The stone sarcophagus, sculptured of red sandstone, is very fine. A female figure stands at each corner; her expanded wings touch those of the companion figure at the next corner. An eye is carved in the stone in the side near the head, enabling the occupant to look out at the outer world when he wished. The outer coffin of King Tutankamen lies in top of the sarcophagus so that we have a

fine view of it. It is covered with gold leaf and ornamented with designs. The designs on the walls are very perfectly preserved, both in outline and coloration. This king's tomb is rather small and insignificant. It was covered up in such a way that the bandits did not find it. Above it, just above it, is the great tomb of Ramses VI, which we entered. King Tut's tomb was rifled twice, it seems, 3500 years ago, but the robbers were discovered and driven away before they had despoiled the tomb very much. What a whale of loot the robbers must have found in the tomb chamber of Ramses I and other wealthy monarchs of the time! The splendour of King Tut's trappings stun us – but he was not a rich king like most of the others

The Valley of the Kings is a narrow cañon running back into the hills from the Nile Valley. The red, brown and yellow hills are frightfully desolate and sun-bitten. They carry not a scrap of vegetation, not even perennial scrub of any kind. It is a truly funerary place. The tombs are tunneled back into the solid rock and those like Thutmosis III are quite elaborate in their chambering. These tombs, which are show places for the public, are lighted by electricity

- The Tamarisk here is a large tree with roundish head. It branches low or has wide-spreading branches. The bark of the main branches is smooth and reddish-brown; that of the trunk is reddish-brown, often streaked with distinct streaks of red, and is only slightly checked. It becomes 25 to about 50 ft. h.; it is much larger than I expected to see it.

The Acacia is the other tree of the Nile Valley. It is about 30 to 50 or 60 ft. high. It has a reddish smoothish bark, the trunk a little roughened.

These two trees, the Tamarisk and Acacia, diversify the Nile Valley, being planted along roadways and irrigation ditches. Both are long-headed and cast a deep shade; both have small or reduced leaves. Of course the

Date Palm is everywhere and appears intermingled with the other two species in the landscape.

I see a good deal of the life of the country side here. A field of sugar-cane is being harvested and makes a busy scene with its numerous workers. The canes are stripped of leaves by hand and the leaves carried off on donkeys for use as fodder apparently. The canes are loaded on camels; the camels kneel, are covered up with cane so as to appear almost buried. They set up a lot of groaning under this process and keep it up until they are made to rise under the heavy burden. After they get up, they stop complaining. All the peasants use pieces of the sugar cane as they

go about for eating, stripping the coarse cortex down and chewing the soft pith.

The peasants eat anywhere they happen to be, seated on the ground around a common receptacle. A man squawts by the wall; a barber squawts by him and shaves him. A load of stone on a 4-wheeled wagon is stalled. The single mule is not able to start it and the driver is not very patient. Other natives come along and give the wagon a start and the mule settles down to the great load. We in America cannot get as great traction out of a single animal.

– Dr. H. H. Nelson, of Breasted's Egyptian Expedition, dined with us last night: He said: "Egypt is better off under British rule than under native government. The native – the fellahin – does not care. In so far as he knows anything about it he prefers British rule because he finds greater and more settled prosperity and also justice in the courts. Of course he can be stirred up religiously on the ground that a christian should not rule a Moslem, but in general he is indifferent. However it is true that Britain in the stress of war promised Egypt independence. It is absurd to talk of Egyptian independence with British soldiers in the Nile Barracks, and a British High Commissioner who tells the King what to do. The King is not popular with the masses for the reason that he is regarded as a British appointee. It is of course the intellectual or educated Egyptian who is so strongly against England. The period of assassination began in 1919 and continued for several years. English officials and even native officials in sympathy with or cooperating with the British were killed. Some 8 or 9 of the "gang" that did this are sentenced to hang and the effect has been to quiet matters. It is certain, however, that only the underlings have been caught and not the higher ups.

It has not rained here in five years. It is a calamity for it to rain. Agricultural operations are predicated on no

rain. When it does rain the rain is highly localized. Cloudbursts which occur in the hills often do great damage by flooding or ruining villages. The earthen houses revert to their original mud.

There was no God of the rain amongst the Gods of the Nile Valley. They did not depend upon rain. One of the leaders of the Egyptians boasted to the Hebrews that the Egyptians did not have to depend upon a God of the Sky for the fertility of the land, as did the Hebrews".

In Deuteronomy the Lord God speaks to Israel and says: When you leave Egypt and come into the land I now give you, know that the God of Israel is the who giveth

and withholdeth the rain. In other words they must "look out" how they behave. (Deuteronomy 11:14, etc, etc.)

The cheapness of labor is always set forth in most unexpected and suprising ways. A road is being widened, on the way to Karnak; the laborers fill baskets of earth, at the side of the road, by means of a broad hoe; the basket is lifted to the head of a second laborer, the carrier who trots off with it and empties the soil at its proper place. Burdens of all kinds, all kinds of freight, as we would say, are carried on the head. Of course one sees the women everywhere with water jars on the head. Fields are often turned up by hand, that is with broad mattocks or hoes. Broken stone-gravel is made by hammering up stone blocks by hand. In this work

one would expect, if it is to be done by hand, a sledge-hammer to be used. But only a small hammer is employed - like a heavy headed machinists hammer. I saw men so employed, on rock piles, first at Gibraltar, second at Haifa and again here in the Nile Valley. It is said that these laborers will not use wheelbarrows for moving earth. Several stories have been told me to this effect. The laborers try the wheelbarrows awhile and then throw them aside, reverting with pleasure to their original baskets. The reason has always been given to me as follows: Conservatism; "oh, these wheelbarrows are no good; we can't use them". It was not until I met Dr. W.F. Albright of the American School of Oriental Research, that the

true explanation was forthcoming. He said: "The Egyptian or Syrian fellahin is used to carrying heavy loads on his head or his back. He can carry most amazing loads on his back. His muscles are developed and co-ordinated for that end. But he does not know how to lift. He does not know how to pull up a weight and carry it along. His muscles are not developed for this kind of work. He has no practice in this. Consequently the wheelbarrow uses him up rapidly and he throws it aside."

Sugar Cane is being eaten by the Egyptians at this time. One sees them everywhere in the streets with the fresh canes, which they break up into short pieces about 8 or 10 in. long and chew as they work.

The Egyptians are industrious and as a rule move rapidly about on their work. If they are moving at all they are more likely to be moving rapidly than slowly. The plowing seems amazingly slow. They use only buffaloes so far as I noticed. This yoke of buffaloes moves very slowly.

Our hotel (Savoy) is on the bank of the Nile River. From the seats in its pleasant front garden with orange and lebbek trees one can look across the very broad lake-like surface of the river and over the valley plain with its cultivated fields to the red-brown and yellow hills, utterly destitute of vegetation, which close the landscape in that direction. Those hills are highly suggestive of a an Arizona scene.

- Cotton. At the Royal Agricultural Society's Exhibition I met Dwight B. Hurd, Phoenix, Arizona, a great grower of cotton, who is here looking over Egyptian Cotton Industry.

In going over the exhibit today I heard a highly interesting discussion of the cotton problem in Egypt, chiefly by Victor Mosseri (Director), Sennitt, Leggard and Hurd.

This last year Egypt had 5,000,000 acres in cotton: Lower Egypt, 3 million; Upper Egypt, 2 million.

One of the problems is to restrict one district to one variety; and to secure pure seed. They plant 4 ridges in 10 feet. The plants are 35 centimeters apart, 2 "trees" in

one spot. They get 15 or 20 bolls per plant; commercially.

In the matter of seed, a strip quite around a square plot is rejected, or rather run through first in order to clean out seed already in the gin. This strip is 10 to 20 m. wide. Then the remainder is ginned separately.

Hurd remarked that Acala Cotton was that chiefly grown in the San Joaquin Valley. He evidently knows cotton from a practical or growers standpoint very thoroughly.

Addresses. cf. pp. 485, 487, 204, 184, 177, 175, 239, 240, 241, 242.

- Youssif Milad, Berkeley.
- A. Shams Eldin, French Hospital Str., Abassieh, Cairo (Met on SS. City of Harvard. Agricultural Engineer)
- Aziz Bichai Effendi, Horticultural Section, Giza (Munderia), Egypt. See p. 214.
- Professor M. I. Hafnawi, School of Agriculture, Giza. See p. 176.
- Mohamed Zulficar Bey, Director of Tanzim Gardens, Ministry of Public Works, Cairo. See p. 241.
- Mohamed Omar, Horticultural Section, Giza.
- Ibrahim Osman, Lecturer in Horticulture, Higher School of Agriculture, Giza. See p. 242

See p. 94

We left Cairo, Wednesday evening at 6 o'clock, for Jerusalem. There was served a most excellent dinner on the Wagon-Restaurant for 30 piastres (about $1.50). About 10 o'clock we came to Kantara-East, on the Suez Canal, where we changed from the train to a ferry, which ferried us across the canal. Just before we started across a great freighter steamer with a search light on the bow passed northward on the canal. We were rapidly passed through the customs but not so quickly through the passport office. The passport office takes down a rather full account of you, including your proposed residence. That night I got a whole compartment in the first-class coach to myself by fooling the guard, one which seats at

least 6 persons. The next morning we were running along through the lowlands, near the Mediterranean, in Palestine. Between the coast and the higher hill country, in the rolling lowlands and foothills one sees much cultivation - wheat, barley and orchards. There are charming cultivated vales with orange orchards, fig and olive. As we rise higher we come into the highlands of Judaea, a rock-ribbed and desolate country or rather indescribably worn and sterile. All through the lower country the wild flowers are blooming and occasionally one sees beautiful patches of the red anemone (Anemone coronaria L.) which looks to the stranger exactly like a brilliant but dark red poppy. This is the "Lilies-of-the-Field" of Solomon, acc. to popular report here, a species

included by Hooker, J.D. in his "Lily" (Plants and Shrubs of Palestine mentioned in the Bible.)

It is very thrilling to arrive in Jerusalem. We are taken to the American School for Oriental Research where we are most hospitably received by Dr. W.F. Albright, the Director, and Mrs. Albright, and given pleasant quarters in the main building.

It is cold here of nights and sometimes by day. On account of the scarcity of fuel of any kind the American School building has no furnace; nor fire-place, nor stove in the bedrooms. A little heat is furnished by an oil stove. The floors are stone and of course "cold as ice" to one's feet. My camp sleeping bag came along with me and I have spread this

on the bedroom floor with great advantage. The weather is beautiful; bright sunny clear days.

The walls of Jerusalem, the walls of the old city with its gates, are of the greatest interest to me. I first entered Herod's Gate, but came back after a little and went along to the Damascus Gate. South from the Damascus Gate runs Christian Street, * see p. 125. extremely narrow, filled with a jostling throng of Syrian shopkeepers, Bedouins from the desert, Jewish rabbis of the orthodox wing as evidenced by a single curl hanging down in front of the ear from under the head-piece, Polish priests with a fur band around their caps, Greek priests, Senegalese blacks, Greek traders, thieves, beggars and peddlers of food, burden donkeys, laden camels — a colorful and

animated scene that one will long remember. Every morning a band of goats passes in front of the American School, coming out of the Damascus Gate, driven by an Arab shepherd. At night they go back into the city. With the shops + houses jammed in solidly one wonders where there is room for goats. They "live with the family" in the cellars and holes.

So far as I noticed in Egypt no animal, burden animal, or riding animal wore a bridle. The driver always carries a rod. With this he touches the animals and they respond to the touch or to an order, especially an order to stop, just as our animals do to a rein. Camels likewise. Likewise a yoke of

oxen or cattle at the plough. All these animals live in the same narrow premises with the family. Each animal is brought up by hand. It is a part of the family. That is one reason why the mud dwellings (unbaked brick) of the Egyptians look like "corrals" to my eye.

So it was in Biblical times that when a man was condemned to death for a crime, it often happened that his family were condemned with him, and even the cattle were killed, for they were part of family and hence shared in the guilt. It showed how intimate was the life of the family unit and their animals, we see the same today, right here before one's eyes. + intimacy

– The main places around and in Jerusalem we have now visited: Dome of the Rock, where Abraham sacrificed (it is now covered by the Omar Mosque); the Via Dolorosa along which Jesus went bearing the cross on the way to Calvary; the pool of Bethesda where he told the to arise, take up thy bed and walk; the site of Solomon's stables; the valley of Jehosaphat, just outside the Golden Gate, where the horn of resurrection is to be blown (the seating capacity is a bit limited for the whole earth); the Garden of Gethsamanee, where are olive trees that may be 400 to 600 years old; Mount of Olives; Tomb of Absalom in the Kidron, tomb of St. James; pyramid of Zacharieh; Job's well

and Calvary. We also drove South to Bethlehem where the religious elaboration of the birth-place of Jesus is carried to regal heights; the main church of the nativity is divided between Greek Catholics; Roman Catholics; and the Armenian Church; with a Mohammadan guard to keep the peace amongst them, at any rate with a gaurd! Curd also on the Mount of Olives, the most holy place there is divided amongst the three sects, the keys of the place being kept by a Mohammadan! to still the strife!! I am already much "fed up" on this religious bunk. There is nothing Christian about it of course.

* footnote to p. 121. Damascus Gate St., not the Christian st. of large maps.

Left Jerusalem, running northward on the Nablus (Shechem Road). In the party Mayor W.L. Gottschall, Miss Jurkulak, Saba the Guide, the chaffeur and myself.

A hilltop village, shortly after leaving Jerusalem, is pointed out as the home of Samuel. We pass El Bireh, associated with the journey of Joseph and Mary, and the spot where the child was first missed (traditional). Bethel is pointed out (Beitin of maps), where Jacob raised an altar in obedience to God's command.

Seilun (Shiloh of Scripture) is pointed out to left right. Here stood the Temple of Jehovah with the Ark of the Covenant; at the annual religious festival dances were performed by the daughters of Shiloh (Judges 21:19,21). Home

of Eli and the youthful Samuel.

Near Mt. Gerizim (where the Jews spat at the opposite Mt. Ebal) is Jacobs Well. It is a slender but beautiful bore some 80 ft. deep with wonderful water in it. It lies on the edge of a valley at the foot of the hill. Here Jesus met the Woman of Samaria who came from Sychar. Near the well is the parcel of ground purchased by Jacob. ["The village of Ballata lies in Nablus Valley; here was the Oak of Shechem". of Baedeker.]. We stop for luncheon in Nablus town. The plain near the town is intimately connected with early Bible history: Abraham; Jacob; an assembly of the people was held here by Joshua [Joshua, 24:1,25]. Nablus was the ancient Shechem.

The plain of Esdraelon (Jezreel) is very extensive and very fertile. We have a fine view to the west of the long ridge of Mt. Carmel.

In this neighborhood and on the way to Nazareth are noted:

Solem (Sulem) – House of the Shunammite woman (2 Kings 4:8).

View of Mt. Tabor (Mt. of the Transfiguration) Mountain of the Precipitation. Nain, raising of the widow's son (Luke, 7:11-15).

Endor, residence of the witch consulted by Saul.

Nazareth. Mary's Well, the only well. Women with water jars are constantly seen there. It was undoubtedly frequented by Mary and the child Jesus.

Kafr Kenna (Cana). = Cana of the Bible (John 2:1-11). The traditional spot is shown where the water was made wine.

We go on to the Lake of Galilee and stop all night at Tiberias. I stand upon the shore of the lake and look across it to the dark mountains of Gilead and think of all that phrase, "Lake of Galilee," has meant and sounded to our western peoples: The Sea of Galilee! The Sea of Galilee, and even more the Man of Galilee, The Man of Galilee!!! The ancient city walls are still standing in part. Across the lake northwards we can see the site of Capernaum or its neighborhood.

We go back to Nazareth where the house of Joseph and Mary is shown under the church that has been built over it. This the next morning.

We run down hill from Nazareth to the plain of Jezreel and cross it to Haifa on the coast, the long high ridge of Carmel standing prominently to the left with its nose thrust towards the sea. The plain of Jezreel or Esdraelon is very remarkable to the eye: its extent; its barrenness of trees and of habitations save for the new colonies of Jews; but no trees scattered over the land at all; no trees at all; but the land tilled and showing at this time the green fields of wheat and barley. On the way down into this plain from Jerusalem was passed the plain of Dothan, a bare bowl in the hills with a flat bottom, the place where Joseph was sold by his brethern into captivity.

We travel north from Haifa along the sea beach, leaving Acre to our left and finally see Tyre jutting into the sea. We leave Tyre to our left, but keep to the seashore plain, passing occasional headlands. The first headland we strike, is before reaching Tyre, Ras en Nakurah, the frontier post of Palestine where a British detachment examines our passports; a few miles beyond is the French frontier post where passports come out again and luggage is passed the customs. All along this coast, by Tyre and by Sidon, the country grows more interesting; it is more fertile with intervening rocky slopes where there is an abundance of wild life. As we near the environs (Plant

of Beyrouth the orchards grow more numerous and extensive, we pass streams that rattle and roar, trees appear in the landscape, and we find ourselves in a land of springs, fountains and high mountains, the Lebanon range rising sharply in the background to snowy heights. Near there are large orange orchards, almond orchards and especially Mulberry orchards for the silk culture. For feeding the silk worms the branches, I judge, are cut off, since the trees are leafy so sharply pollarded that they present to my eyes a curious appearance; even old trees are flat-topped above a trunk 6 or 8 ft. high, the pollarding tending to make the crown somewhat umbrella-shaped in winter. with its leafy

upright shoots of the season produced in abundance the summer aspect may be different.

There were also Loquat orchards bearing great abundance of fruit, some of the fruits tending to yellow a little, but most are still green. Doubtless this species bears fruit or rather matures fruit in S. Calif., but I do not recall seeing fruit near San Francisco. Certainly the tree on my lot in Berkeley never set fruit.

Tree Hibiscus in full flower is in the hotel Garden in Beyrouth. How different a land it is from the rock-ribbed hills of Judaea!

It has been and is storming with rain most of the time this whole trip. We have had occasional bits of sunshine but not for long. On the return trip we buy blood oranges at Sidon. They

are delicious. We also have served at our table in Jerusalem, Jaffa Oranges. These oranges are very large, very thick-skinned, and with a flesh that has very delicate thin-walled cells, so that on eating a section there is a full outrush of juice which has a very fine taste and is, I think, superior to the Washington Navel of California.

We pass again the frontier guards on going southwards. I am told by Dr. D. F. Higgins, geologist of the Megiddo Expedition, that there has been a whole lot of smuggling or rather border running by Syrian bandits and so on into Palestine. The bandits pass across into Palestine after things quiet down, they go back and begin again. The British tommies have about

stopped this. It is a wide and in some places a desolate frontier and it seemed to me rather easy; but it is not so easy they say. By this token you are seldom out of sight of a human being; and the natives are great tattlers; it would be hard to keep your presence secret.

The more reliable natives are also used as police. They make a good patrol in spite of being moslems. 1. Money talks louder than religion, and the British pay them well. 2. They wear a good-looking, comfortable and warm uniform which is clean and which gives them a great air of importance. 3. The discipline is severe and they are subject to the severest punishment if they are derelict in duty.

— was invited to dinner by D.C. Grasovsky, in charge of the Jerusalem division of the Palestine dept. of Ag. He is married; his wife, I noticed, found it not easy to follow my English. They speak Hebrew in the house. His sister and her husband Mr. and Mrs. Edwin Herbert Samuel were present. He is an Oxford man, the son of Sir Herbert Samuel, former High Commissioner. He has a quizzical humor and compared my account of Sequoias age with a turtle; for a turtle is quite a diver — 300 years; fancy a turtle saying how-de-ye-do to Queen Anne. It was a very pleasant evening.

No. 10,751. Jacaranda mimosaefolia
Madeira Isls. Funchal.
Circus large round flat pod. Large tree. Municipal Garden

No. 10,752.
Madeira. Municipal Garden.

No. 10,753.
Madeira. Municipal Garden.

No. 10,754. Euphorbia peplus L.
Along Garden edgings and walls, Madeira Isls. (discarded)

No. 10,755. Mangifera indica L. det. St. John, Nov. 18, 1964
Large tree. Madeira Isls.

No. 10,756. Bignonia venusta
Forming great masses of color on walls and trellises. Stamens inserted at top of tube. Stamens 4, the lower pair longer. Upper lip shortly cleft. Stigmas 2, broad. Madeira

No. 10,757. Erythrina sp. (seeds)
Tree. Madeira Isls.

No. 10,758. Alyssum sp. (discard)
Algiers, 35 mi. w. Tombeaux de la Chretien
No. 10,759. Erica sp. (discard)
with 10,758.
No. 10,760. Rosmarinus lavandulacea L.
with 10,758. (discard)
No. 10,761. Pistacia sp.
with 10,758. (discard)

No. 10,762. Parkinsonia aculeata L.
Karnak Temple grounds, Luxor, Egypt.
No. 10,763. Albizia Lebbek (L.) Benth.
Lebbek Trees. Luxor, Egypt.
No. 10,764. Alhagi sp.
with 10,762
No. 10,765. Tamarix sp.
With 10,762. Stamens 5, 5, 5 — this counts. Petals 5. Stigmas 3.
No. 10,766. Balanites aegyptiaca (L.) Del.
with 10,762.

No. 10,766a. Anastatica Hierochuntica. Rose of Jericho.
Mattatan Hills, Cairo. Given me by Mohamed Diaz of the Dept. of Horticulture.

Feb. 16, 1926.

No. 10,767. Ceratocephalus falcatus (L.) (Pers.) var. exscapus Boiss.
Bethlehem
No. 10,768. Draba verna discard
Bethlehem.
No. 10,769. Euphorbia sp. discard
Bethlehem
(Nos. 10,767. to 10,769 = moist bed of former pool.)
No. 10,770. Veronica syriaca Roem. et. Schult.
with 10,769.
No. 10,771. Malcolmia crenulata (DC.) Boiss.
This crucifer grew with 10,769

No. 10,771a. Thlaspi perfoliatum L.
Crucifer.

No. 10,772. Hyoscyamus aureus L.
Calyx tubular-turbinate with broadly lanceolate shortly acuminate, equaling cor. tube. Cor. lemmon yellow, with continuous black markings in throat. Lobes (3) of lower lip conspicuous, rounded, a little crenulate; upper lip, its lobes (2) much reduced, with a broad cleft between them, adnate each to the adjoining lobe of lower lip so as to make the lower lip appear as if 5-lobed. The stam. (5) and style (circular obscurely 2-lobed) stigma are thrust out; extruded through this slit, that is their curve upward between the lobes of the upper lip, leaving the throat open below them. (Cont: p. 143). →

No. 10,773. Silene aboricion Murr.
Petals pink; crests at base of claw 2, very distinct, a trifle larger than represented in diagram at a. Styles 3, distinct. Ovary on a gynophore 3 times as long as the ovary. Ovary 1-celled! I cannot see any cell-walls at all - even at base. Certainly there are none in the young fruit. The placental column is free and elongated!
Calyx, pinkish-red, cylindric, inturned, bearing short bristly

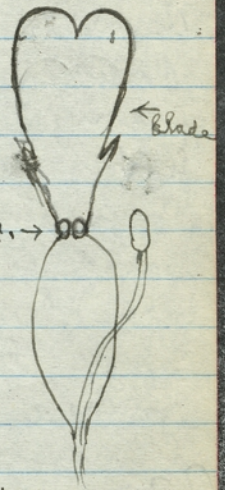

Diagram of petal blade and part of claw; the stamen bent to one side.

glands. Bracts at base of cyme clusters membranous. (Cont. p. 145)

No. 10,774 **Balycotome villosa** L. (Leguminosae)

Marvellously spiny low shrub growing over the rocks, ½ to 2 ft. h. Stamens monadelphous. Calyx truncate, with a single broad or transversely quadrangular bract about equating the calyx. Flowers (cor.) bright yellow. A second dissection shows a 3-lobed bract; the calyx truncate but irregularly few-slit or minutely toothed. The first one, - I now see, - was slightly 3-lobed. - Feb. 18, 1926, Nakoura.

Cont. from bottom of p. 140. Note above: upper lobes of calyx triangular shortly acuminate, - add to previous remark re-calyx. Ovary 2-celled, the prominent placentae rounded, covered with numerous ovules. Lower pair of stamens the ~~longer~~ shorter; the style exceeding the stamens. The stamens are 5; in 2 sets; 2 lower the shorter, inserted a little higher than the upper 3. Collected at Nakoura, Feb. 18, 1926, the frontier post of Palestine towards Beyrout.

No. 10,775. Asphodelus microcarpus Viv.

Perianth-segments flesh-pink, (whitish), with a brown band down the middle. Stamens with the filaments arising from a quadratish scale, the scales minutely short-hairy (a little setulose) on the margins. Style entire; with the stigmas 3, short (as if capitate). Ovary 3-celled, 2 ovules in each cell; one ovule in each cell aborting in the 2/3-grown fruit examined. — This I saw in flower from near Jerusalem to coast, north to Haifa, east to Nazareth, and well north towards Sidon. It favors rocky spots, or at any rate has persisted in rocky spots. It is not so common, nearly, as the Mandrake, but is widely distributed and is frequent.

Cont. from p. 142. The slender tooth on each side of petal limb is very pretty; it is also an excellent genetic character. — Bethlehem, Feb. 16, 1926.

No. 10,776. Ricotia lunaria L.

Petals 4, pink, with broadly obcordate limb and long claws. Stamens 6, with short filaments, shorter than the flat anthers which are sagittate at base. Calyx reddish, cylindric, very shortly toothed, 2-auriculate at base; the calyx is cylindric by virtue of sepals connivent on upper half; the opposite sepals being auricled or shortly spurred at base. Stamens 6; 4 long, 2 short. Pedicels recurved after anthesis. — [illegible], Feb. 16, 1926.

No. 10,777. Anemone coronaria.

The white flowers are found as far as Galilee. Feb. 18.

Dead Sea, at mouth of Jordan
Feb. 14, 1926

No. 10,778. Gagea chlorantha M.B. Perianth segments green outside, yellow inside, not noticeably nerved. Filaments 2/3 as long as perianth. — In other particulars agreeing essentially with the diagnosis in Post, Fl. Syria and Palestine, p. 897.

Jerusalem, Mount of Olives, Feb. 23.

No. 10,779. Anemone coronaria
Jerusalem. Feb. 16.

No. 10,780.
Dead Sea, n. end. Feb. 14.

No. 10,781. Tamarix
with 10780. Feb. 14.

No. 10,781. Tamarix jordanis
with 10,780. Feb. 14.

No. 10781a Salicornia fruticosa L.

No. 10,782. Atriplex Halimus L.
with 10,780. Feb. 14

No. 10,783. Nitraria retusa
with 10,780. Feb. 14.

Jerusalem, Feb. 24, 1926

Forests of Ancient Palestine.

"Denn von der Meeresküste her schiebt sich, oft bis zu 10 km und darüber, ein Hügelland aus marinem Kalksandstein nach Osten vor, das im Altertum wie teilweise auch noch bis in die jüngste Vergangenheit bewaldet und daher nur für die Viehwirtschaft brauchbar war" — Alt, Die Landnahme der Israeliten in Palästina, Leipzig. 1925. (Sonderabdruck aus dem Reformationsprogramm der Universität Leipzig. 1925). p. 12.

Ha gives as references: Dalman, PJB 10 (1914), S. 33; 18/19 (1923), S. 16; Ort und Wege Jesu (1924), S. 236 f.

Vielleicht waren grosse Teile der Gebirgsrücken noch gar nicht ihrer ursprünglichen Bewaldung

entkleidet und unter den Pflug genommen." — l. c., p. 22.

"Conifers were used for the woodwork of the first fortress of Gibeah." stage 1. - See ref. blow.

"The first fortress had its stories, as shown by the layer of ashes representing woodwork between its remains and the foundations of the second fortress. xxx its thickness varying from 5 to 30 cm. xxx Mr. John Dinsmore, the well-known botanist of the American Colony, kindly identified specimens of the cinders from the burnt layer as cypress and pine. It is naturally very interesting to learn that there were coniferous forests — scrub pine and cypress — in the vicinity of Gibeah about 1200 B.C., since

these trees have been extinct for untold centuries in this part of the country, though recent decades of experience in Jerusalem prove that the soil and climate are admirably adapted to them." - p. 8, see ref. below.

"Another interesting point was that a relatively large number of beams were employed in the construction of our [the third] fortress, as shown by its thorough destruction by fire, which slivered and calcined the stones of the upper story, filling the central chambers of the basement with a mass of stone slivers, charred potsherds and cinders nearly two meters deep. Charred fragments of such beams were identified by Mr. Dinsmore as almond — the coniferous forest had thus entirely disappeared

from the environs of Gibeah during the first three centuries of Israelite domination. The significance of these facts in connection with the Biblical statement that Asa built a fortress here constructed partly of stones and beams carried away from Baasha's fortress at Ramah is evident, and will be duly stressed in chapter IV. – p. 20. See ref. below.

Prior to the Israelite conquest the hill country was but sparsely peopled, and was largely covered with bush and forests of dwarf oak and scrub pine. The open spaces were mainly devoted to grazing, a fact which explains how the first Hebrew immigrants could roam so freely through the country, as faithfully recounted in Biblical tradition". – p. 44.

The Hebrew movement into the

country was a gradual unorganized movement, which continued for some 300 to 400 years before the Israelite conquest. The Hebrew settlers pursued a pastoral vocation, just as described in the Biblical traditions of the Patriarchs. Albright distinguishes between Canaanite Hebrews and Israelite. – All the above quotations and facts, pp. 148-151, taken from Albright, Journal of the American School of Oriental Research, vol. 4, 1925.

"The eastern plateau, bare today, was certainly well-wooded down even to a recent time, for the place names imply the presence of forest and copse".... G.A. Smith, Hist. Geog. Holy Land, p. 447

– Oak forest originally on the plain of Sharon. G. A. Smith, l.c. p. 52, who says Sharon originally meant an allied to oak.

Jerusalem, Palestine.

– Cont. from p. 151.

– Kiriath-Jearim, the town of the woods. – Jer. 26:20.

– David in the forest of Horeth – 2 Sam. 22:5.

– I made me ~~a~~ pools of water, to water therewith the wood that bringeth forth trees – Eccl. 2:6.

– When Jonathan stopped to gather wild honey (in contravention of the order of Saul), he was in the region of the Esdraelon Plain. Now wild honey, means honey of the forest. In the Hebrew transl. of the New Testament, 3rd chap. St. Matthew, "wild honey" occurs again but that translation uses the word "forest" which does not occur in the English version. This locality is northwest of Jerusalem says Bade.

Cont. from p. 152

– In St. Matthew, ch. 3, v. 4, in the version of the New Testament rendered into Hebrew by a modern Hebrew scholar ( ) wild honey, says Bade, is rendered honey of the forest. [See p. 152, 331.]

– "Wood country" – Joshua 17:15.

Salkindson

– Krauss, Samuel, Talmudische archaeologica

– Gustav H. Dalman, Aramaisch – Neuhebraisch (Worterbuch zu Targum, Talmud und Midrasch) (see p. v. Sd. 1897)

" " Dict. Talmudic

– Cf. Hastings, Dict. Bible for flora

Intern. Dict. Bible (Chicago)

– The Jewish Encyclopaedia (N.Y.)

– International Critical Commentary of Bible (Look up tree in Concordance first)

– Cheyne & Black, Encyclopedia Biblica

– Palestine Explor. Fund (articles on botany – Kitchener, young lit.)

– Agricultural Museum.

This is located on Street of Baldwin I, between St. Paul's Road and Godfrey de Bouillon Street.

It has several rooms on the first floor devoted to the display of agricultural products and natural history subjects more or less related to agriculture. In the entrance lobby is a display of trees grown in Palestine, as follows:

– Forest Room: (forest or ornamental)

Jacaranda ovalifolia (Bignoniaceae) Trop. Am.

Brachychiton populacea

Washingtonia filifera var. robusta

Kigelia pinnata (Bignoniaceae). Sausage Tree with long hanging fruit. Trop. Am.

Acacia albida (at Nahalal)

Quercus palestina (at Nahalal)

Acacia seyal

Retama roelam

Populus euphratica – Jordan Valley used in making matches.

Balanites aegyptica (Simarubaceae) Dead Sea – fruit oleaginous.

Tamarix jordanis – lower Jordan.

Ceratonia siliqua – Carob. Timber hard and workable. Fruits the food of

Ficus sycamorus.

Bamboo.

Fraxinus oxycarpa

Casuarina equisetifolia, planted as screens and as wind breaks.

Schinus molle.

– Another room contains a display of grasses and cereals:

Briza maxima and gracilis.

Andropogon ischaemum.

Arrenatherum elatius var. palestina.

Aristida elata.

Hordeum bulbosum and maritimum.
Barley of various cult. sorts.
Wheat, the cult. vars. chiefly from Syria, Col., Algiers, Tunis and Egypt.

Poultry - photographs.
Building stones.
Soil samples.
Cattle photographs.
- Another room contained a collection of native birds and mammals - stuffed skins.

Hebron

During Feb.. I made a trip to Hebron from Jerusalem in the Megiddo truck with Dr. Fisher, D.F. Higgins and two others of the Megiddo staff. We stayed only a short time but it was for me a fine experience, this city set in a high hollow of the bare hills, so compact, so truly Levantine oriental is all its life that I was thrilled by its narrow streets, its bee-hive like concentration of rooms above and below ground.

See 43;441.

Out-of-Bounds

for all ranks of His Majesty's Service

One sees this sign in Cairo, Hebron and Haifa; also Alexandria.

– Jews all over Palestine have for a long time been living on alms from Europe. Cf. Baedeker, p. 253. cf. p. 270 infra.

No. 10,784. Poterium spinosum L. Spiny low undershrub. Flowers unisexual in bisexual catkin-like spikes, the pistillate above. Perianth of 4 distinct sepals. ♂ fl. = stamens about 30. ♀ fl. = one pistil with one-celled ovary and 3 stigmas; stigmas red, laciniate-fanshaped; ovules 3. Another count of stamens = 34. Styles 3! the stigmas, as just described, terminal on each. Sepals valvate. Ovary 1-celled; styles 3. Ovary ned. inferior, but only seeming so. The neck of the calyx tube is closely constricted over the 3 acheres, so that these, in so minute a structure look like 3 "ovules"; but careful dissection shows these continuous with the 3 styles. – Jerusalem, Feb. 25, '26, in

the Wady Lum-zer. This is Eccl. 7:6: "For as the crackling of thorns under a pot, so is the laughter of the fool." - acc. Past. This, the Thorny Burnet, may well be the Christ-Thorn. It is abundant everywhere. I have continually seen donkeys loaded high with the uprooted plants. It is used for fuel extensively. - Feb. 25.

A. E. Harte, Director of the Y.M.C.A. in Jerusalem, said: I went over western Europe raising funds for suffering India in ; Norway, Sweden, Denmark, Germany, Austria, France, England and Scotland. I got the best and readiest response in Scotland, next best in Denmark; poorest in Germany, France, Austria.

- Are the Jewish colonies on a sound economic basis. Mr. Rosenblatt, a Jew. from the U.S., says Tel-a-viv. is on a remittance basis and that it is too much composed of non-agriculturists, such as University students. He says the German Colonies are flourishing because they were agriculturists at home and then a German does not undertake a thing unless he can do it. Dr. Fisher speaks "of machinery being left out in the weather, modern reapers from the U.S. and broken only in some small part; that he asked why such were not mended, and received the reply: Oh, they will send more from the U.S." This idea, of being supported by money from the U.S., seems very general, in comments one gets. There is a colony of old-time Jews in Jerusalem which have long been living on Roth-

Schild Foundation.

— The Markets of Jerusalem:

All the important food products are Palestinian except four: cocoanuts, corchum; hazel nut; chesnut;

Cocanuts, brought from East Indies
Hazel nuts; " " Asia Minor.
Corchum, seasoning meats, etc
Chestnut- ?a root for

✓ No. 10.785. Carthamus tinctorius

Used for coloring rice and other foods in cooking.

✓ No. 10,786. Vicia sativa.

This is one of the more important crops. The seed are used for camel feed, for poultry and for cattle. It is not used for human food.

Ca-si-na.

✓ No. 10,787. Andropogon

sorghum. Poor people use it for bread. It makes, however, a poor bread and the better classes do not use it.

No. 10,788, Vigna sinensis

Same genus as the cow-pea.

✓ No. 10,789. Ervum lens

Easy to raise. It is a quick crop and can be grown almost anywhere in Palestine

✓ No. 10,790. Phaseolus vulgaris

Like the plant grown in the U.S. Dinsmore speaks of it as the only thing here which is common in U.S. This is too sweeping a statement and he probably qualified it.

✓ No. 10,791. Citrullus vulgaris.
Watermelon.

Cont. p. 167.

– When I arrived in Jerusalem J. A. Dinsmore said to me: "Why have botanists in all recent decades neglected Palestine? No one has been here to botanize since old times. You are the first great botanist to come here since I have been here which is now twenty-eight years".

I noticed that he took no heed of the Jewish staff of botanists at Jaffa, nor of the Professor of Botany in the Hebrew University. When I was, later, at Jaffa, Dr. Warburg in speaking of the plans for systematic work on Palestine, spoke deprecatingly of what Post had done and referred to Dinsmore as "too old".

– Hanifeyeh + Samovar. "Two things that could well be introduced into America generally. The native is astonished that we should wash in water and continue to dip our hands into it; he lets the water run and the soiled water continually passes away. The samovar, is, of course Russian and with charcoal water can be boiled in 15 min. and kept hot for 3 or 4 hrs. The Arabs generally have these two things; the latter of the two they got from the Russians."

J. A. Dinsmore.

– Mr. Dinsmore says: The higher English officials in Palestine are always men of honor; the lesser ones are frequently corrupt. The Englishman is trustful. He trusts very freely and does not see the things which

are going on before his eyes. He does not seem to see that things are wrong. It is hard for him to believe that his men are dishonest. I think the American is less trustful; he is more suspicious of wrong-doing".

The bruifxcin Thorn, Polirium spinosum or Burnet, is collected into huge piles as large as a house for use in the lime-kilns in burning lime. The natives use nothing else; they have nothing else in the way of wood or fuel available.

The Markets of Jerusalem, cont. from p. 163.

No. 10,792. Trigonella foenum-graecum. These seeds have a marked odor when newly harvested and have a good deal yet. The natives use them to cook with meat and other foods as a seasoning.

No. 10,793. Cicer arietinum

This is a favorite food with the Bedouins of the desert, as well as of the Arabs of Palestine. It has the reputation here of having more nutriment in a given space than any other seed grown in this region. Here in Palestine the whole plant is pulled up just before it is mature, roasted or browned in an oven, and used by the natives as they travel or go about their work. They pull off the pods one by one and eat them,

finally discarding the rest of the plant.

No. 10,794. Ervum lens

This is ground into a flour and used as a soup by the natives. It is also mixed with rice. It is said to be the plant of Esau's pottage.

✓No. 10,795.

This is Mecha seed from Arabia

✓No. 10,796. Corylus

From Asia Minor

✓No. 10,797. Lupinus termis

Natives eat this boiled. One constantly sees boiled seeds in great vessels in the markets and stalls. The natives

are fond of buying a handful as they go along. This species is also used as a corn crop.

✓No. 10,798.

Squash seed. Much eaten by the natives. Exposed in all public markets. A handful is bought and eaten on the way.

✓No. 10,799. Vicia faba

Broad Bean. Grows readily. Favorite eating.

- Apricot Paste. - Looks like thin red leather dark rolls. Important article of export in Syria and Palestine. Much used in Egypt.

- A few days ago camels brought loads of olive tree trunks for the bakery near here. Yesterday when I passed the wood was being weighed by the seller and buyer!

Wady-Lum-Zer

No. 10,800. Valantia hispida L.

No. 10,801. Cynocrambe prostrata Gaertn.

No. 10,802. Gagea reticulata (Pall.) Schult. f.

No. 10,803. Nonnaea obtusifolia (Willd.) DC.
This forage has blue fls.

No. 10,804.
Cor. yellow.

No. 10,805.

No. 10,806. Arisarum vulgare Targ.-Tozz. (A. Arisarum L.)

No. 10,807. Bellevalia flexuosa Boiss.

No. 10,808. Paronychia argentea Lam.

No. 10,809. Arenaria picta

No. 10,809a. Biscutella didyma

No. 10,810. Cynocrambe prostrata Gaertn.

No. 10,811. Calendula arvensis L.

No. 10,812. Ranunculus myriophyllus var. Microsolymitanus (Boiss.) Post

No. 10,813. Silene aegyptiacum L. f.

No. 10,814. Mercurialis annua L.

No. 10,815. Fumaria densiflora DC.
(F. micrantha Lag.)

No. 10,816. Symphytum palaestinum Boiss.

No. 10,817. Arenaria picta (Discard)

No. 10,818. Erophila minima C.A. Mey. (Draba m.)

No. 10,819. Bellevalia flexuosa Boiss.
This lily is common.

Jerusalem, Feb. 27, 1926.

No. 10, 820. Plantago psyllium L.

No. 10, 821. Calendula arvensis
Calendula aegyptiaca Desf. var. suberostris Boiss.

No. 10, 822.
(Seemingly Paronychia)
Paronychia argentea Lam.

No. 10, 823. Smilax aspera L.
Rock cliffs.

No. 10, 824. Hypericum
Euphorbia thamnoides var. hierosolymitana Boiss.

No. 10, 825. Hypecoum grandiflorum
This Fumariaceous plant has yellow flowers.

No. 10, 825a. Anchusa aegyptica (L.) DC.
Borage. Jerusalem.

Jerusalem to Cairo, Mar. 4.

Left Jerusalem by the train at 8:20 in order to go back to Cairo to visit the agricultural country. Palestine

In the lower part of the hill country there is wild land with native bush scattered over it. Not much but still representative of certain things. If one went down on the train to the first station where the "canon" opens out into a valley (Al Ferd), a new Jewish settlement here, and walk back to Bitter, one could botanize the lower part of the Judaea highland.

We change cars at Lidd, and by a sweeping circle go south along the coast towards Suez. There are pretty cultivated tales, especially oranges, and we pass through the country of Samson, for this is Philistia.

We pass Magdal sta., the station for Ascalon! Then comes desert with low thin scrub. The sand-dunes grow larger and more important along shore. There appear to have no vegetation but there are occasional round-headed trees 10 to 30 ft. high. This is such typical desert sand-dune that it seems strange to see these occasional trees. And then desert again - at least no trees I mean. Near Arish there are date groves near the sea-groves of considerable extent. There is no other vegetation with them. In some places the groves have been invaded by sand-dunes. Trees 50 to 65 ft. high have been covered save for 15 to 20 ft. Arrived in Cairo at about 10:30.

March 4, 1926

Prof. Mohamed Shawky Bakir
Helouan Telephone 86.4.
School of Agriculture Cairo 266.
or through Mr Smith T.M.C.A.
N204. Cairo

(Autograph.)

I write to Ibrahim Osman: Before leaving the East on my way home to the far Occident I wish to express my thanks for your courtesies to me in Cairo. It was an especial pleasure to go about with you and I enjoyed very much the particular places we visited together. — Of course I had often seen illuminated books, but never have I before seen anything approaching the splendor of the illuminated copies of the Koran in the Arabic Museum. There is much satisfaction in having seen objects at once the most beautiful and the most costly of their kind. — With pleasant remembrances, Sincerely Yours, W.L. Jepson

A hoarding in Cairo:
Achetez une
Ford
et dépensez la différence.

M. T. Hefnawi. (autograph).

See p. 117. Professor of Botany in the College of Agriculture, Giza.

He says: Trigonella is a bit bitter for forage, although not for sheep. It is not used for flour, though it is mixed with flour to make a bread for the wheat poorer classes. It is a stomachic in its effect. It is also used to adulterate coffee.

Panicum crus-gallii, as forage, is used for alkaline areas

Cow-peas ( ) are grown only for human food. Rust on the foliage prevents use of the plant for forage purposes.

Mohammad Askar [Bey]

Professor of Veterinary Science at College of Agriculture. Has a photograph of mural decoration, Tutankhaman tomb, showing cattle; - at least from tombs at Luxor. He shows me: Queen's Cattle, showing great bags of milk. These cattle have great horns. Such horned cattle are not known in Egypt today; but Prof. Askar showed me a photograph he had taken of cattle in the Sudan showing crescent-shaped horns. The Sudan cattle may show erect horns. Cattle with broadly spreading long straight horns are found in Spain today. The monuments were true life.

Sakieyeh = water wheel.
Sha-duf = "well-sweep" water lift operated by hand-power.
Noragh = threshing sled.

— Trifolium alexandrinum — Berseem. There are several hort. varieties of this. I see it everywhere from Alexdria to Luxor, lower Eg. and upper (xa) Egypt. It is planted immediately after the high water in August. The first crop is taken after about 40 days, for the next 6 months they make about 5 cuttings. For 3 or 4 months of the year only do they have to provide other food for stock. It is a universal ration: for cattle; camels; horses; donkeys; sheep; goats. Towards the end of the season they get a dry Berseem which helps out for a part of the time. Then for the three months of high water they use wheat straw, maize and so on. It is a most luxurious plant. It everywhere makes fine stands and is really a joy to behold. The cabmen, carriage drivers, ↑ in Cairo cart drivers, camel men — all carry a ration of it. This morning I saw a camel train heavily loaded with it. It is amazing what loads and what different kinds of loads go safely and easily, thus and, most noteworthy, without waste. — The above from Profs. Askar and Hafnawi. ↑ as to Berseem planting

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— Many times, in Egypt and perhaps more especially in Palestine, I saw the peasants weeding the wheat fields. The "weeds" are of course saved and fed to cattle.

- Trees at Cairo. — Kigelia pinnata on Ghizereh Island, with the great sausage-like fruit pendent from the branches.

- Jacarandria mimosaefolia, access feathered foliage and large round (circular) flat pod. An avenue at Giza. [Collected this in the Madeira Islands.]

- Ficus religiosa. With long slender point to the rounded ovate leaves. The leaves are light yellow; the bark is a smooth very pale yellow. There is a fine tree of this, tall broad round head on a native drill ground by the Giza Zoological Gardens. When I first saw it I thought it looked like a Cottonwood. When I looked at the small "nuts" on the branches I thought it some plant I did not know. Then I recognized finally it was Ficus religiosa.*

- Ficus bengalensis. Banyan. In the Giza Zoological Gardens there is a very fine tree by the monkey section. Its long slender rootlets hanging vertically from the branches branch and rebranch and spreading finally sweep the ground. But they get very thick before taking hold; that is a slender thread would be of no use for support, and the first function is probably support, so that the crown may spread more widely.

-Cont. p. 182.

* This tree one of a small grove of this sp., stands in a native drill ground where a small company of soldiers are being put through the manual of arms. They drill with rifles clad in white , such as is often worn, and turbans.

- Professor Askar (see p. 177) is working on diseases parasitic of camels, sheep, etc.

He also discussed a Schistos. sonia species which infects 90 o/o of the human population of Egypt and is the cause of the disease called Bil-harzedai. The "egg" has a spine on one side which enables it to bore through membranes. Through the passages of the body it finally reaches the bladder, or it may invade the testicles.

- Cont. from p. 181.

Oreodoxa regia. Some excellent Royal Palms in the Giza Zoological Gardens.

- Professor Hefnawi advises me to visit the desert east of Alexandria at Borg-el-Arab which will now be in fine bloom. I plan to leave Cairo on Friday and go to Borg-el-Arab on Saturday. He invites me to lecture at Giza, Wed. aft. at 4½. I am told to take Keatings Insect Powder on this trip to Borg-el-Arab; also mosquito netting and plenty of warm clothing. [The last was quite in order; the first two proved wholly un-necessary!]

Cont. from p. 257. with spears, making beer from bread, slaughtering ox, granary. Juncus straws were used for making mats.

Noragh = threshing sled or drag with iron disks on bottom of it.

Cairo, Egypt

William J. Lugard

Botanist
Royal Agricultural
Society
P O Box 63 Cairo
[Autograph] Egypt.

R. S. Sennit,
Royal Agricultural Society.

Sam. M. Orensteen
Assistant to Luggard.

A very high wind gale is blowing from the west off desert sands today. The day after my arrival it rained heavily in Cairo and everything under foot was very sloppy.

March 8, 1926

Maarad Cotton. — This has been derived from Pima seed, said to have been a pure Pima seed lot. The Pima seed when planted here in Egypt showed great variation; it behaved as if it were not pure line seed. Its behavior in this respect was associated with changed and varied conditions. A selection process was instituted and carried on for several years and finally a cotton called Maarad has been isolated that is considered valuable. It is planned that this strain if it continue to show favorable qualities will replace Sakellaridis in Lower Egypt which is the important cotton crop of Egypt. Marad yields about 25 % more than Sakel or to put it more accurately the yield of Maarad is 5 per feddan, the yield of

Sakel is 31/2. Maarad is however more susceptible to climatic changes from year to year. Sakel may be said to be "steadier"; it is less influenced by slight changes in conditions from year to year. 700 feddan were grown in 1925.

Sakellaridis. This cotton which has been grown in Egypt for about 13 years has shown signs of deterioration for 9 years. On account of the low state of intelligence in the fellahin farms it is difficult to maintain purity of the seed. However the seed should normally a certain amount of variation in fuzz, there is a certain percentage of naked and half-naked seeds. Plants from such seeds do not produce standard Sakel, the seed-cotton is deficient in lint; or

length of lint, or in strength.

Ashmouni is the cotton of Upper Egypt. It is a short staple cotton inferior to Sakel. It is however, easily grown, has a high self-fertilization record, and produces on yields heavily. During the very exceptional conditions of the cotton-market in 1922-1923 in the United States buyers invaded the Egyptian markets and paid high prices for Ashmouni cotton; so that the fellahin was beguiled by this abnormal or at least passing condition and tended to displace Sakel by Ashmouni in the Delta district, which was regarded as a misfortune for several reasons. The Sakel cotton is of course superior and secondly its purity was much impaired by this invasion of Ashmouni

– Breeding of Cotton is carried on with a very large number of individual plants, by reason of cheap assistance. As a matter of field practice these cotton breeding men are in the habit of planting a dozen seeds in a spot. They do this, because on account of the flooding of the Nile Valley and consequent caking of the surface soil a single seed cannot break through. In other words they use the plant as an individual rather than a single seed. Probably they have now reached a point where it becomes necessary to use different kind of soil cultures and keep record of the individual progeny.

– Beladi is the variety of wheat grown generally in this country. 15 years ago Gibara introduced a Gorgan wheat from India. It was used as the basis for segregation into:

1. Hard wheats. } Gluten wheat
2. Semi-hard wheats } Carbohydrates
3. Soft wheats. } Carbohydrates

The natives prefer a soft wheat and the soft wheat raised here is called Hindi wheat. The peasants prefer a white flour for their bread and they do not care for a bread which is a rising bread; they want a non-raising bread.

Hindi makes a heavier yield but has not displaced Beladi for this reason. Beladi straw is relished by animals. Hindi straw is not eaten by animals readily. Chemical analysis does not show any difference in food value. The differences are prob-

ably mechanical. The Hindi straw is enough rougher to make a difference. The ears of both wheats are bearded; but in Baladi the awns fall promptly, or more promptly and persist or fall tardily in Hindi.

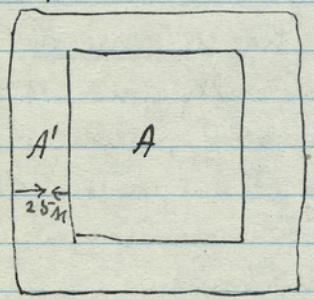
The wheat is threshed by the peasant by means of a drag which is driven over the threshing floor. This drag is known as a

At the Agricultural Exposition there is a very good exhibition of wheats: Egyptian and Indian but also Algerian and South African wheats, especially the bearded wheats.

Also fine display of beans.
Display of maize excellent. Each variety is mounted on a card with data as to maturing period, number of rows in ear, and many other facts.

- First Agricultural Exhibition since 1912, in Cairo. Sponsored and arranged by Royal Horticultural Society. This Society controls, at least in large part, the sale and distribution of fertilizer in Egypt and has a turn over yearly of five million dollars. One of the men (Wilcox) tells me it is the richest Agricultural Society in the world. It has a research side, working especially on cotton, with a European staff, and a commercial side; being thus quite different in character from our agricultural societies at home.

– In breeding: seed purity. A plot of a given variety has a bound 25 meters wide of the same variety or a variety very close to it. This bound is put through the ginning machine first. Then the main plot is ginned; as the seed is of the A or with very little A'.



Maarad Cotton: It shows a superior yield to cotton except once in a while – one year only so far: in 1924 when climatic conditions were unfavorable to it: 20 to 24 % better yield in 1921–1925 except in 1924 as stated. It is several days earlier; it has less "exarts" and "mabrooma". In 1925 400 feddan planted in various parts of delta averaged 5 kantara per feddan. The Sakel the same year yielded only 3 1/2 kantara per feddan.

Cairo, Egypt.

— Visited today one of the larger markets in Cairo, with W.B. McAuliston. One of the interesting vegetables is the Foenicula

Dried apricots of two kinds: one dried very ripe; another perhaps ripe also but firmer. Both dried with the seed; both very inferior in appearance to our California products.

Sweet Lemon. Has an excellent flavor and approximates an orange. Also Jaffa Orange, Blood Oranges, Tangerines, Ordinary Egyptian Oranges. Rough Pomelos.

There are Egyptian Tomatoes characterized by their strong longitudinal ridges. McAuliston says that when Forbes was here he introduced the (cont. p. 198

— Visited the Acclimitization Garden today in company with Carl McAuliston (W.) It covers about 25 acres and has two rather large glass houses. The collection of trees interested me very much. I noted the following:

Solanum muricanthum. The leaves of this are a bit fig-like and I mistook, at a distance, the calyx-encased capsules for small fig nubbins

Lycium horridum. S. Africa. It is wonderful how like the foliage is to Lycium pallidum, the common species about Barstow in the Mohave Desert.

Bauhinia

Several species of this genus. The leaves are obcordate and slightly folded along the midrib so that they have a very distinctive appearance. One species has clusters of quite long pendulous legumes. — over —

Cont. from prev. page.

Grevillea briesii – abundant red flowers; a good-looking shrub.

Pereskia bleo – Mexico. This suggests a branched Ocotillo (Fouquiera splendens), but with a flare of spines at the node instead of one.

Schinus terebinthifolius – This is a fine-looking tree from Brazil. It is much handsomer than S. molle, which is also here.

Caesarvoxylon quadrangulare red berries. fine tree.

Ficus sycamorus – with old clusters of fine fruit-figs scattered along its limbs.

Casuarina equisetifolia. A fine tree here.

Wigandia imperialis – quite a small tree, slender,

with very large leaves.

– Convolvulus floridus – Teneriffe.

– Sakellaridis Cotton introduced about 1912. Shows in recent years signs of deterioration:

1. Hybridizing (seed impurity)
2. Attacks of boll-worm.
3. Lessened yield. } 6 kantars in '12 / 3½ " " '25
4. Land does not rest. That is a law that only ⅓ of the land can be planted to cotton in a given year, but it is not well observed.*
5. Perhaps subsoil water
6. Mechanical mixture of seed in ginning.

Generally speaking the finer the lint the lesser the yield. One complication is the rental terms. The landlord takes [Cont. p. 204]

* See p. 203

Cont. from p. 194.–
smooth tomatoes. These are in the market here, too, and were rather widely planted but are now becoming much mixed with the wrinkled type as evidenced by the lot before me.

Vegetable Marrow. Different forms of this. Young states used as food. Also saw the dead ripe gourds, on a high shelf in the market. These have a neck; I did not realize the two are the same but McAlister says they are.

Potatoes of course.

American Apples from the Pacific Coast! – Winesaps (red) and Newton Pippins (white), Santa Clara Valley Prunes! California Dried Apricots (40 c. lb.) American Dried Apples.

Filberts. Sycamore Figs. Dates

both from the Sahara and from Mesopotamia. Watermelons (there are practically on sale all months in the year). Cauliflower. Carrots. Beets.

– Near the postoffice is a series of stalls in the streets, the public writers – who write for those who cannot. There is a bench of such gentry in the Russian grounds at Jerusalem opposite the law courts.

No. 10,825.

Return. Coll. of Agriculture grounds, Giza.

Cotton acreage in Egypt.

Lower Egypt – 3,000,000 acres.
Upper Egypt – 2,000,000 "
Total . . . 5,000,000 "

Giza Zoological Garden

- Excellent individuals of Poinciana regia (acacia leaf and smooth somewhat slate-colored bark) and of Ficus bengalensis are in the garden. Also Ficus elastica.
- Fine collection of Parrakeet with their intense and varied tropical coloring.
- Gazelles from Suez - remarkable for their very small size, tiny, slender limbs - 15 to 18 in. high. ↑ Dorcas
- Turtle Dove. This is very like our dove, dull-colored as a whole but with bluish epaulettes on the wings and perhaps 4 white outer tail feathers on each side of tail. These do not show except when flying. Cont. p. 201.
- Water Bock (Cobus defassa). Sudan. female hornless; male with long curving upright horns.
- Connochaetus gnu. He found

Giza Zoological Garden.

cont. from p. 202

Herons with tufts on head.
Adam Bey's Stork - Afr. and S. Arabia. Head not tufted.
Jackal, Dongola. Small fox-like animal.
Egyptian Jackal, a little Coyote-like.
Batteleur Eagle, trop. Afr. small red face.
Dongal Dove, with blue jaw crests and a polka-dot portion like a guinea-hen.
Barbary Partridge, dove-colored sides with black-banded tips to white ↑wing feathers.
Cocos romanzoffiana, Cocos Palm. Brazil
Ficus bengalensis. Banyan Trees.

She] look as if a child had made their faces for fun. South Africa.

C. taurinus - Bridled Gnu or Blue wildbeest. Bechuana Land.

- Ovis lervia - Arani wild Sheep. Dongola. Heavy pendant mane from jaw to forelegs. Horns similar to those of our Mountain Sheep at home.

- Oryx beatrix. Arabian Oryx. White; slender nearly straight pair of long horns.

- Dorc. cnt. from p. 200. Reddish-brown on breast and back, blue on rugs; flare of white at tail.

- Flamingos, fine examples, with their spidery stilt-like legs.

- Indian Buffaloes.

- The chimpanzees displayed marvelously human-like motions. This species has naked ears. It can catch objects thrown at it. The Sacred Baboon has a clean face. He raises his hand and looks at it: They do

over each other in the most understanding way picking out parasites.
— Gray Crow (wild), black forehead, black wings, black tail.
— Hoopee, black and white barred wings and white bar towards base of tail; barred top-knot. Long curved bill with which he searches out insects or worms in loose soil. — wild.
— There are a large number of long-legged wading birds such as storks, cranes, flamingoes. It is interesting to see them asleep standing on one leg.

— To dinner Mar. at Prof. McQuiston's. He has a wife and 3 attractive children. He is Prof. of Biology in the American University. There were also there Prof. G. E. Gates, Prof. of Biology in University of Rangoon and his wife. He is on his way home to Keene, New Hampshire, on leave from the East. It was a most pleasant occasion for me. The dinner was very good and the conversation highly enjoyable.

— Shawky Bey Bekir.* — As to Berseem I understood him to say: There is a 3-crop rotation practiced on the land. One part lies fallow; one part goes to wheat; another part is sown to Berseem, crops taken and then sown to cotton. So that each part of the given farm comes around to cotton, wheat or fallow in the 3 years. Sometimes there is a 2-year rotation. There is government regulation in this matter. — It is easy to misunderstand Egyptians who, though speaking English very well, may not appreciate the significance in full of a certain question asked. Returning from Giza (the day I lectured there) M. I. Kahil, Lecturer on Engineering, accompanied me to Cairo. He said: Berseem is sown in Nov., rarely in Oct.; one or two crop are taken and Mar. 15 at latest, sometimes late Feb., cotton is planted and matures by July.

* See his correct name on p. 175.

Cairo, Egypt

Tewfik Fahmy
Cotton Research board
Giza.

(autograph)

Georges Bonaparte (A Greek)
(autograph)
Ing. Agronome
~~2~~ Deir-el-Banat, Cairo.
2 Deir-el Banat, Cairo

cont. from p. 197.
the cotton say, leaving the wheat to the rentier or the berseem, and the fellah has not a proper interest in cotton. The government is attempting to purify the cotton fields of the Delta region by supplying a certain amount of pure seed of its own growing to important growers, gradually reducing the number of impure fields.

-Vegetables at the Agricultural Exposition.

Two different kinds of vegetables are sometimes grown, one for the natives, another for Europeans. Vegetable Marrow
1. Scandarini - green kind. Small form called beat. This served at Hotels. Brush form. There is also a var. of this, var. patris, which is imported from Syria and the island of Chios.
2. Baladi - Used by natives. Two forms {white / green} large; liked by natives. Trailing herb.

The ripe full grown fruit is a gourd which is not exactly flat, because having a constriction near the middle, the stem end being a little smaller than the other end. Seed is mostly imported but when they desire seed from their own gardens they leave only 1 or 2 fruits on a vine.

In the vegetable section I saw some circular flat dark objects that

looked much as if I had gone into a San Joaquin wheat field or rather stubble field after the first rains and mixed up a lot of mud and chaff from the threshing stand, spread in a cake 5/8 inch thick in a milk-pan and dried. Some students were passing and as all advanced students know a little English I asked what this object in the exhibition was. He tried unsuccessfully to explain though he knew that it was a byproduct from making oil. Others joined him and a great discussion arose and the crowd increased in size and of course in violence. This was fortunate. The concourse and its excitement attracted the attention of an Egyptian gentlemen who knew the nature of the cake and explained it to me. Carthamnus tinctarius is planted around the fields as a sort of hedge (since it is spiny);

there are two pickings of the flowers 3 or 4 days apart. The red flowers are the useful ones - the coloring matter being soluble in ammonia or other similar agents. The seeds are crushed for an oil which is used in cooking. The residue forms the cake which excited my curiosity, ↑black and which is used for fuel. In English the plant is safflower.

Finocle (Foeniculum vulgare) is exhibited as "Sweet Maryoram". The Europeans use it a great deal, sufficient for it to be a commercial crop; but the natives dislike the odor of it.

Other vegetables and fruits exhibited are: Fortoofa (Vegetable Artichoke), Globe Artichoke, Turnips, Carrots, Baladi Orange, Jaffa Blood Orange, Jaffa Orange, Kohl-jabbi, Cauliflower (Sutton's Magnum Bonum), Brussels Sprouts, Sutton's All-heart Cabbage,

Cont.
Sweet Potatoes, Leeks, Cherry Tomatoes, Spinach, Radish, Bell Pepper (natives too fond of them; used as pickles), Lettuce, Asparagus (poor), Limes, Cape Gooseberry (Physalis), Beets, Sutton's Golden Nugget Tomatoes, Cherry Tomatoes.

Mallow (near Malva parviflora) 3 to 4 cuttings - used as greens - Kohl. Zeaza. Native Cabbage is large, appears early, heavy cropper. - very much used. The ridged Tomatoes bear exportation.

Limes, two crops { Nov - Feb. ; Aug - Oct. - best. (water period)

Physalis not used by natives; Gooseberry liked by Europeans for a preserve. Leaf Beets.

Naples Squash is in great demand as raised in Egypt for

Cont.
a vegetable and for marmalade. A Honey or Stamboul Pumpkin is also liked. It has an oblong shape, constricted at one end.

Colocasia - Native Taro - Kaulkas - washed (the root) ten times in hot water, preferably not, before boiling. Otherwise it is indigestible. The natives think of it as the King of Vegetables.

All the important comments on the above plants were given me by Georges Bourgarel. See his signature p. 204.

Cairo, Egypt

Agricultural Exposition. –

Remarkable exhibition of cotton. Shows growing of cotton to picking, transportation, ginning, all the processes of making yarn and spinning thread. By-products of cotton seed well illustrated.

One of the interesting things worth making known in the U. S. are the sample bales of cotton. These in shape look very much like a bale of hay of the 250-lb type as baled in California and like that is bound by 5 wires. After this is done the bale is covered neatly with sacking and measures about 8 X 8 X 12 inches. Mr. Dwight B. Hurd, of Arizona, a leading cotton grower, admired these samples very much. He said it made him heart-sick to see the kind of samples of American cotton as seen in the Liverpool Market and the manner in which the samples were handled.

– M. Victor Mosseri invited me to luncheon today. He is director of the Technical Section, Royal Agricultural Society, and knows a great many persons about the world. He lives in a fine mansion with princely furnishing on the Giza side of the river, a short distance up-stream from the Grand Pont de Kasr-en-Nil. He knew E. W. Hilgard in Paris many years ago, and Riley, Whitney & Coville of the U.S. He has either met in Eur. or corresponded with. His son is now in the University of Cambridge. He is much interested in cotton breeding and has developed his "own ideas" about breeding and takes all credit very decidedly for what has been done. This work was started by Harbes and Freeman. One of his remarks, a shibboleth, is that fertility is not fixity. He owns rich farms near Cairo and has commercial interests

in Cairo. The Moseri family is an influential one in Egypt.

On my way to this house, a short distance from the exposition grounds, a servant of the Royal Agricultural Society was sent to show me the way. This servant walked at my heels. Now how can one tell where to go, which way to turn and so on, with the servant walking behind you? Well it was done - the servant speaking only Arabic at that.

In Jerusalem one sees officers of the British Administration walking with a servant at their heels. It is also done for show and to impress the natives I've no doubt.

- One evening I heard the frogs croak in the Esbikiyeh Garden. There was no doubt that the sound came from frogs - and yet no such sound as that had I ever heard before. It had the generic quality of a frog's voice - but that is all. It was a sort of hoarse rumble - a sort of deep rumble. Whereas our frogs at home have a high shrill note that carries a long way.

- Dimorphotheca ecklonis. A fine garden plant, low bush 1½ to 2 ft. high, with "flowers" the size of a Shasta Daisy, white rays and purple center. It is hardy, vigorous and a most pleasing plant in full bloom. It is far superior to the Shasta Daisy.

Cairo, Egypt.

Aziz Bichai [Effendi,]
Horticultural Section
Giza (Gunderia)
Egypt

Autograph
See p. 117.

On Friday March 12 I went to Alexandria in the afternoon. In the morning at 8 o'clock, Mar. 13, I met Aziz Bichai at the railway sta. and went with him to Borg-el-Arab, which lies to the west of Alexandria and is not a great distance away - about 60 kilometers.

The country is very arid but lies near the Mediterranean. The rainfall this year, so far, 4 56 cm.

Cont. p. 223.

No. 10, 827. Centaurea

No. 10, 828. (Pisum) Vicia cuspidata Boiss.

No. 10, 829. Asphodelus microcarpus Viv.

This grows in stools abundantly in the desert. The rootstock bears below a huge cluster of carrot-shaped tubers - I should say 70 to 90 in a cluster, the individual carrots being about 3 to 4 or 5 inches long. The coloring matter in these tubers is used by the Bedouins to dye their home woven cloths.

Alkanna tinctoria

No. 10, 830. Echium = *
Corolla blue.

No. 10, 831. Malva aegyptia L.
Malvoid plant.

*No. 10, 830. Alkanna tinctoria
Root used as a medicinal dye.

No. 10,832. Matthiola bicornis
Pink cruciferous (Sibth. et Sm.) DC.

No. 10,833. Trifolium resupinatum
With white inflated calyx.

No. 10,834.
Composite; on ground.

No. 10,835. Herniaria hemistemon J. Gay
Prostrate

No. 10,836. Allium sp.
(discarded)

No. 10,837. Lathyrus stenophyllus
Corolla red-pink.

No. 10,838. Calendula arvensis?
Rays brick-pink.

No. 10,839. Chrysanthemum coronarium L. Rays golden-yellow.
Rays 13, 12, 13. Used by the Bedouins to incite milk production in their cattle.

No. 10,840. ~~Lotus~~ Trigonella
Prostrate.

No. 10,841.
Cichoriad.

No. 10,842. Thymelaea hirsuta (L.) Endl.
Erect; perennial. Corolla dull whitish yellow, 4-merous.

No. 10,843. Lycium arabicum
Low bush - 1 ft. ft.*

No. 10,844. Achillea santolina L.
Low erect perennial.
Flowers yellow.

No. 10,845. Hordeum murinum L. var. violaceospicum Eig.
This grass grew in cult. land.

No. 10,846. Lathyrus pseudocicera Pamp.
Leguminous (L. cicera L. var. lineatus Post)

No. 10,847. Scorpiurus subvillosus L.
Boraginoid, Leguminosal

No. 10,848. Erucaria microcarpa Boiss.
Cruciferous. (Rebeudia microcarpa Coss.)

No. 10,849. Sonchus radicaulis Sch.-B. F.
Cichoriad. Stems diffuse

* corolla pale lavender, turning yellow.

No. 10,850. Lotus lanuginosus Vent.
Cor. bright brick-red.

No. 10,851. Muscari sp.
Fils. purple.

No. 10,852. Erodium hirtum

10,852a Trigonella sp. / Tubers on roots; tubers eaten by natives.

No. 10,853 Anthemis rotata Boiss,
White rays

No. 10,854. Cotula anthemoides L.
Moist swales.

No. 10,855. Lotus arabicus
Corolla yellow, banner turning brick red.

No. 10,856. Fagonia cretica L.
This may not be Fagonia, but it resembles our species in California of that genus.

No. 10,857. Iris sisyrinchium L.
Corm small. Fls. blue.

No. 10,858. Plantago notata Lag.
Low semi-moist spots.

No. 10,859. Astragalus hamosus L.
Looks like our annual Astragalus species in California.

No. 10,860. Bromus rubens L.
Grass.

No. 10,861. Ranunculus asiaticus L.
Cor. rich deep crimson.

No. 10,862. Convolvulus althaeoides L.
Cor. crimson.

No. 10,863. Statice tubiflora Del.

No. 10,864. Anagallis arvensis L.

No. 10,865. Alkanna tinctoria
Boraginoid.

No. 10,866. Koeleria phleoides (Vill.) Pers.
Grass.

No. 10,867. Lamarckia aurea (L.) Moench.

No. 10,868. Plantago coronopus var. cristata L.

10,868a Malva sp. var. microcarpa

No. 10,869. ~~Lotus~~ Trigonella Mari-tima Del.

No. 10,870. Anthemaria sp.

No. 10,871. Composite

No. 10,872. Biscutella didyma L.
Crucifer.

No. 10,873. Vicia amphicarpa
Leguminous

No. 10,874.
Cirsium. sp.
10,874a Centaurea sp. (sessilis?)

No. 10,875. Hyacinthus sessiliflora viv.
(Bellevalia s. (viv.) Kunth.)

No. 10,876. Ornithogalum tenuiflora var.
Per. white with green band down back of segment.
10,876a Pulicaria (Jacque) Halacs.

No. 10,877. Linaria parviflora
Cor. pale-cream; yellow.
spot on palate.

No. 10,878. ~~Astragalus~~ Tetragonolobus purpureus Moench.
4-winged pod. Cor. crimson.

No. 10,879. Senecio vernalis Waldst. et Kit.
Cor. yellow.

No. 10,880. 7 Vicia peregrina L.
Leguminoid.

No. 10,881. Beta vulgaris ssp. maritima (L.), Thell.

No. 10,882. ~~Suaeda~~ Oligomeris subulata (Del.) Webb.
Alkaline valley.

No. 10,883. Buplevrum.
B. glaucum acc. Dinsmore. Occurs near Dead Sea also I understood him to say.

No. 10,884. Reseda sp.

No. 10,885. Echium calycinum Viv.

No. 10,886. Koeleria phleoides (Vill.) Pers.
Grass of low flats.

No. 10,887. Cuscuta palaestina Boiss.

No. 10,888. Schleropoa memphitica (Spreng.) Parl. var. dichotoma
Grass
10,888a Trisetum macrochaetum

No. 10,889. Caucalis Torilis nodosa (L.) Gaertn.
Rocky rift near sea.

Borg-el-Arab, Libyan Desert

No. 10, 890. Erodium hirtum
near sea, in moist flat.

No. 10, 891. Crucianella herbacea Forsk.
Moist flat. Three individuals only were found.

No. 10, 892. Ononis vaginalis Vahl.
Cushion leguminoid plant of seashore sands; flo-yellow.

No. 10, 893. Halocnemon strobilaceum (Salicornia cruciata Forsk.)
Seashore sands, heavy perennial root. Low, bushy.

10 893a Globularia arabica

No. 10, 894. Limoniastrum acc. M. Drar. monopetalum (L.) Boiss.
Seashore sands.

894a Ajuga Iva Schreb. var. pseudo-iva

No. 10, 895. Calendula sp.

No. 10, 896. Erucaria
Crucifer

No. 10, 897. Caylusea hexagyna
Seashore or near it; that is in alkaline valley.

No. 10, 898. Umbellifer Malabaila ?

March 14, 1926.

No. 10, 899. Reseda
Alkaline valley.

No. 10, 900. Statice
Limonium tubiflorum (Del.) Ktze.

No. 10, 901. — discard —
Leguminoid. Cor. purple.

— (Cushion Polygonum —) ?

No. 10, 901 a. Centaurea glomerata Vahl.
? Onopordon

— Cont. from p. 214.

We had our headquarters in a frontier post that is very like a stone fortress. This region was once fertile and populous in Roman times and the present quadrangle is built from excavated Roman ruins — that is the stoness are of ancient masonry. The room where we sat before a fire and ate our meals is on the northwest corner. My sleeping room is on the second floor

immediately above the living room. The whole place is scrupulously clean though severe and semi-barren in its arrangements; but still scrupulously clean. Messieu Bichai brought his servant with him from Cairo and there were other servants in the place.

Aziz Bichai had his training in the Gemblenx Agricultural School of Belgium. He was there in 1914, got caught by the war, was not suffered to leave and suffered much from hunger during the German occupation. "One eats his breakfast and is hungry; you eat luncheon and are hungry; you eat dinner and are hungry," he said.

When we went out botanizing there was a servant to carry the basket in which my plants were placed. The servant also carried my collecting press. The botanizing seemed very scanty but after all I got a great deal considering the dry season. It was difficult to get sufficient individuals to fill a sheet or make a respectable collection of specimens.

All around were the black tents of the Bedouins. They drink the brackish water of their wells. They eschew the Nile dwellers desert and say they will never drink Nile water. They sow a little barley but the barley will not make a crop this year. In the moistest barley spots we had our first botanizing.

The second day we walked to the seashore,

passing over a range of low hills, then across an alkaline valley where were evidences of old Roman works, then over another very low range of hills and down to the sand-dunes of the ocean shore. On this ridge nearest the sea stands the gaunt worn tower of a Roman light-house; west of this are considerable Roman walls of dressed stone. This is now a coast-guard station and the camel-feeding place is interesting. There must have been in the three "alleys" space for 30 or 40 camels. The camel kneels, that is lies down to eat, and feeds from a little square manger that is made of mud and in which the

straw is heaped.

Coming back across the dunes Ayiz Bichai pointed to a thorn bush about 4 ft. high. It was skillfully entangled with netting as a trap for quail. The quail fly to the north in Feb. and Mar.; in August and September they return. On this long flight back the birds become hungry, enter the bushes to feed on the berries and become enmeshed by the net and are caught by hand. They are a great windfall to the Bedouins who sell a bird for 2 or 3 piasters, which is accounted a "good deal since they get the bird for nothing!"

On the train, going back to Alexandria my friend pointed out a hunter who was carrying a string of dead birds of quail.

There is an experimental garden in this place where trees and bushes for semi-arid areas are being experimented with. On the seashore, in the sand, at the Roman lighthouse above referred to is a fig orchard. It seemed a most unlikely place to have a fig grove - but I was assured the figs were excellent.

Passing through the experimental garden a Bedouin came stepped out and saluted with a submissive obeisance (see p. 238) that carried a species of loyalty and deference such as an Occidental never experiences and cannot conceive.

I was much struck by the number of Lotus species and their close resemblance to

our California types. In fact there were narrow areas a few yards square where I might have been botanizing in California, so closely did they parallel our sections of Lotus in general appearance. I am certain, as a matter of field experience, that Lotus is an American genus and that our species are congeneric with those of the old World; a conclusion previously established on comparision of herbarium specimens.

On returning to Alexandria I went again to the Hotel Windsor. The next morning I went to Montazā on the seashore west. I left my luggage with the station-master. First - I had to identify myself for he asked "Who are you?" in reply to my request to leave the luggage there.

Then I went to the sandy strip w. of the King's Palace but my botanizing was interrupted by a gaard with a shot-gun. He spoke, of course, in Arabic; and while he did not threaten or show any real discourtesy he made it plain that I must not do what I was doing. So I walked back to the boundary, whereupon he stopped. Then I made it plain that he must go with me to the station. So I marched along, he following behind. I never once turned to see if he were coming, since my dignity was at stake. At the railway station the whole matter was rehearsed in truly Oriental fashion. I showed my credentials and quoted

my Egyptian friends in the Ministry of Agriculture, showing their signatures in my Field Book. A telephone call to the Palace brought a sort of Chamberlain* and the upshot was, that with a railway gaard, I went back to the sand hills, in a place a little further along. There was very good botanizing here, not so good perhaps as at the spot first selected but still good. The plants of the beaches and sand-dunes were largely leguminous; sand-binding legumes and a very interesting sand-binding Silene. See no. 10,914.

Bichai Effendi wants bulletins on date palm culture and dry land culture from our government.

* Soliman Nasr, Royal Palace, Montazah. He gives me his card.

Alexandria, Egypt (sand-dunes pt. Montaza)

No. 10,902. Plantago
Sand-dunes.

No. 10,903.
Leguminoid. Sand-dunes.

No. 10,904. Hymenocarpus circinnatus, acc. Mohamed Drar.
Hippocrepis multisiliquosa L. (Rumex lacerus Balb.) pictus Forsk.

No. 10,905. Rumex (vesicarius)
acc. M. Drar. Sand-dunes.

No. 10,906. Senecio desfontainei Dr.

No. 10,906a. Tissa Spergularia media (L.) Presl. Alkaline flat.

No. 10,907. Lotus polyphyllos Clarke (=L. argenteus Webb.)
Leguminoid. Extreme dune type near sea. Typical sand-binder.

No. 10,908. Lotus arabicus L.
Looks like Lotus.
Sand-dunes.

No. 10,909. Suaeda fruticosa (L.) Biss.
Salty marshy spot.

No. 10,910. Echium longifolium Del.
acc. M. Drar. Sandy flats

No. 10,911. Medicago

No. 10,912. Cakile maritima Scop.
Sand-dunes. (discarded

No. 10,913. Cakile (Discarded)
Sand-dunes.

No. 10,914. Silene succulenta Forsk
acc. M. Drar. Extreme type of sand-dune binder.

No. 10,915. ?
Composite of the sand-dunes.

No. 10,916. Ononis vaginalis Vahl.
Sand-dune sand-binder.

No. 10,917. Brassica tournefortii Gouan.
Crucifer

No. 10,918. Chenopodium murale L.

- It was interesting to note the number of Leguminosae on these sand dunes. I took only those in fl. The sand-binders are mostly leguminoid.

Running over the broad delta of the Nile which stretches away to far horizons is an impressive experience. There are not many, often none — date palms between the coast and the Nile Valley at Cairo. In one place in the delta I noted rows of tall Tamarisk trees — fine rows — but the trunks somewhat inclined under the wind. This is not true of the Date Palm; its trunk goes up and up and on up — but keeps straight.

I watched the sun go down over the vast plain of the delta — a huge ball of flaming yellow. It suggested many thoughts to my mind as I watched it — the far west and its lurid

light. There are three young Mohammedans, in my compartment.* I notice that they are watching the going down of the sun very eagerly, more than I myself. And far more interested I wonder if they are admiring the splendor or impressiveness of the scene? After the disk has quite gone below the horizon they still watch — and then forthwith their bundles of lunch come out and they all fall to eating! It is the first day of the fast of Ramadan and they may not eat between sunrise and sunset.

* They bought eggs, bread and oranges at Tanta but I noticed they did not eat!!

† No. 10, 918 a. ? Hypecoum procumbens L. Very showy. Sand-dunes, Alexandria to Cairo. Yellow. Cor. yellow.

This morning I went to the College of Agriculture and conferred with Professor Askar, Professor Shawky Bekir and Aziz Bichai. I was presented by Shawky Bekir to the Director of the Horticultural Section*. He took me to the Herbarium Room where herbarium specimens are being worked upon, presenting me to Mohamed Draz, who is identifying Egyptian plants and who seemed very well informed. He finds Muschler's Manual of the Egyptian Flora very defective and imperfect. He also complained strongly of the American practice of changing the names of old and well-known plants

* Ministry of Agriculture
See his name p. 239.

of Europe, and of Old World countries generally. He held the view that this practice made the American books unusable and therefore nearly useless.

There was presented to me Mohamed Abdul Badei who is commissioned by the Egyptian Government to study citrus culture in California. I am writing for him letters of introduction to Dean Merrill, Dr. Webber and Professor C.O. Smith.

As to Mohamed Draz see further, on p. 240.

No. 10, 918 f. Alcana tinctoria acc. M. Draz. The Bedouins use the root as a purple dye. Alexandria.

7 av Gorgy Boutros Soliman
(College of agriculture)
Label Boutros Soliman
=(brother in California)

A. R. Bahrawi
Post-Office Box 532
Cairo (Egypt.)
(student who plans to come to California to study fruit-growing and citrus culture.) See p. 237.

Cont. p. 228. There was a suppleness to the body that gave a profound emphasis to the inclination of obeisance.

v No. 10,918 c. Senecio
Montaza, Alexandria, sand dunes.
v No. 10,918 d. Orobanche

Mahmoud Abaza Bey*
Director of Hort. Section.
[not an autograph]

Abd-el Kader Foad Effendi.
Prof. of Agriculture.
[not autog.] This man is a quiet gentleman of pleasant manners and affable ways. I was presented to him on the occasion of my first visit to Professor Hefnawi.

* This Egyptian is a stylish man who speaks English very well. His eyebrows are quite bushy and neat. To him Dr. Stevenson had written on my behalf; he showed me Stevenson's letter; and took me to the herbarium, presenting me to Mohamed Draz. See next page.
He wants an expert in tobacco culture.

Mohamed Draz, Horticultural Sect., Giza Branch. I found this young Egyptian making determinations of Egyptian plants by means of Muschler's Manual which is a very imperfect work. He named for me a good many plants from Borg-el-Arab and from Mariout. On the whole he did very well but made a number of bad breaks at guessing* at sight, calling a Tissa species by the name Fagonia. I suspect he may be very near-sighted as are so many on account of trachoma, which has afflicted 90 o/o of the population, I have been told.

* though very ready to acknowledge an error, one of his strong points.

Mohamed Zulficar Bey
Director of Tanzim Gardens
Ministry of Public Works.

To this gentleman who is a man of consequence I was recommended by Professor Hefnawi. He is a cultivated gentlemen of importance and has an office in the Ministry of Public Works. He is a school-fellow of Hefnawi and they are very warm friends. He presented Mustafa Munir Adham, of the Royal Geographic Society who took me to the very splendid rooms of the Royal Geog. Soc., in particular explaining a map of Cairo for about 1450 which he had made as based on his historical researches. The Soc. has many maps and plans and reliefs of Egypt.

Cont. p. 243.

Ibrahim Osman
Lecturer in Horticulture
Higher School of Agri.
Giza
See p. 117.
Presented by Professor Hefnawi.
I am to meet him tomorrow at 11 o'clock in front of the Opera Midan; when he is to show me the monuments, or rather certain ones, of Cairo. See p. 245.

– McAlister tells me something of the struggle for existence on the part of the average Egyptian: If he lose his job it may be for two or three years before he gets another like it. I remember the pitiful eagerness of the servants on the Wady Hof trip to receive money. But the Bedouins we met asked for none!

– Cont. from p. 241. The assembly room or general meeting hall of the Society is a large room with a very rich ceiling. It is quite regal.

W. C. McAlister says: Brown & Morris are breeding wheat (Ministry of Agr.); Simpson has been detailed to study vegetation in irrigation canals with a view to its eradication. Geo. F. Freeman, I do not know where his place is now; went to Tex., corn. Fy French Govt. for Indo-China cotton; etc. Forbes went to French Sudan, I have lost track of him. Notice the old olive trees at El Ras s. of Jerusalem; one tree 12 ft. diam.; some trees have fissured, through heart decay, longitudinally and have made separate trees.

– At the Agricultural Exposition I saw two pretty nurse girls about 12 years old carrying babies. It turns out that they are the mothers!

I saw another singular sight today. A garbage can, dragged from an apartment house to the street, was emptied on the pavement. Then with baskets the garbage was picked up and put in the garbage can standing by. I suppose this is another illustration of the incapacity of the fellah to lift a heavy load; though he can carry burdens many many times heavier than he can lift.

– Sharp shock of earthquake at about 3 o'clock while I was seated in lobby of Hotel Bristol. I got to my feet instinctively and started toward the door! It had the characteristic horizontal movement that I know so well in California.

* 1. Library
2. Arab-Museum
3. Bab Zwaila (Gate of Z.)
4. Abdel Rahman El Zahabi House.
5 Tomb of Sultan Kalaoon

Streets:
1. Takt el Rabi (Wood & Marble works)
2. El Fakhamin (Barbary States Goods)
3. El Tarbeea (Perfumes)
4. El Sagha (Goldsmiths)

*This morning I had a sight-seeing trip with Ibrahim Daoud (see p. 242). We went first to the Arab Library and saw amongst

many other things the copies of the Korans belonging to various Sultans, huge folios, most marvelously illuminated. The fineness and detail in the gold work made a strong impression on my mind, as well as the great elaboration of it. These copies ran from about 1200 to 1600 A.D. Then there were earlier copies from about 10 to 12 cent. in cufic characters and written on parchment. There were also primitive Arabic books, i.e. mss., from, if I remember rightly, 4 to 8th centuries. Some of these earlier writings were on papyrus, parchment, wood, pottery and stone.

This collection of Korans extends to copies from Morocco to India. There were also some wonderfully beautiful illus-

trated books from Persia. (For some notice of the Oriental MSS. see Bodleian, p. 57).

The Arab Museum. I was conducted around and shown its main features very carefully; the ancient carved doors; metal-worked doors in bronze and silver; carved lattice windows*; water jars; cups for drinking with a sort of sieve over the top that prevents the water running too fast when drinking; a stone sculptured in such a way as to cool water running over it; huge lanterns; coins; fabrics; inlaid and mosaic work in wood, ivory and ebony; etc. Bab-el-Zuweleh, Next: great gate in the wall of Cairo, the only one left. Next; an ancient Arabian house in primitive condition, with its costly mosaics and wood work. Next: Tomb of Sultan Kalaun.

* Mashrabiyehs.

- Yesterday I was taken by Zulficar Bey to the two great mosques: Mosque Sultan Hasan (very old) and immediately opposite Mosque Rifaiyeh (very magnificent example of best and most costly Arabic church architecture); and to the very old mosque (circa 1836) where there is a minaret with with a spiral stair outside.

This evening I was entertained at dinner by Zulficar Bey. He had also as guest Professor Hefnawi Effendi and had expected Askar Bey whom he failed to reach, though a place was spread for him. The repast was excellent, varied and plentiful. He is a charming and agreeable gentleman From his English phrases I assume that he was, like

Hefnawi Effendi educated at Cambridge.

- March 19. Went to Helouan (Helwan) as guest of Shawky Bey Bakir. We went out by donkey to the Wady Hof, in the western desert near Helwan. The hillsides are practically destitute of vegetation but there is a little vegetation in the wadies. I saw something of the life of a Bedouin family; in these hills is their "winter resort"; in the summer they go to the banks of the Suez Canal. Like every one else Shawky Bey depicted their life as a very happy and independent - independent certainly, and happy because having so few wants. In these hills the often regularly bring their water from the towns and of course use

it very sparingly.

Shawky Bey took me to his house in Helwan. The library is sumptuous — beautiful furniture and several thousand finely bound volumes. He has also a private botanical laboratory with three excellent compound microscopes and one fine binocular. He gives the work in histology and economic botany in the college; Hefnawi that in Physiology, Genetics and some Systematic Botany.

He says that the donkeys we rode today to Wadi Hoof can be purchased for 5 or 6 pounds; but that there is a fine donkey imported from Hassa in Mesopotamia and that such donkeys are called Hassui. Their pace is is so remarkable that one

can drink a cup of coffee while riding on them.

There are many mules used in Egypt as draught animals for heavy loads, mostly one mule to a cart. Today, Mar. 20, I saw three or four companies of a British field force file into the Kasr-en-Nile Barracks. Nearly every soldier of the column of twos led a fine mule and most, I should say, rode a mule. The officers were mounted on horses.

No. 10,919. Lavandula verbena Supina L, Low bush, Wady Hof

notice how the bush has been cropped down by camels.

No. 10,920. Caylusea canescens acc Shawky Bey. Wady Hof.

No. 10,921. Pennisetum dichotomum (Forsk.) Del.

Grass, forming heavy stools 2 to 3½ ft. high and 3 to 4 ft. broad, in the Wady Hof.

No. 10,922. Zilla (mayagroides) spinosa (Turra) Prantl acc. Shawky Bey. Sub-cactoid Crucifer in

Wady Hof, Helwan, Egypt

Wady Hof. Very spiny! 2 to 3 ft. l.

No. 10,923. Iphiona mucronata
Wady Hof.

No. 10,924, Pityranthos tortuosus acc. Shawky Bey. Infl. decent type, of the switch-plant form!!

No. 10,925. ~~Sonchus~~ ~~Iphiona~~ ~~mucronata~~
Composite; called, by Shawky Bey, Calendula but of course far from that.

No. 10,926. Echinops spinosus L.
Wady Hof.

No. 10,927. Trigonella monspeliaca L.
Leguminoid; in moist spot, closely prostrate. Wady Hof.

No. 10,928. Alhagi maurorum
Camel Thorn. Common Medic.
Wady Hof.

No. 10,929. Zygophyllum album acc. Shawky Bey. Wady Hof.

No. 10,930. Capparis spinosa

acc. Shawky Bey. Spreading bush with stems 2 to 6 ft. long, forming a low bush. Wady Hof; and on the sides of the Wady.

No. 10,931. Linaria aegyptiaca
Scrophulariaceous low spreading plant with spur to corolla. Wady Hof.

No. 10,931a 10,931b 10,932. Zygophyllum ~~coccineum~~ simplex (annual) acc. Shawky Bey. Wady Hof.

No. 10,933.
Shawky Bey says this is of the Aizoaceae. Saline spots near Helwan.

No. 10,934. Zygophyllum ~~simplex~~ acc. Shawky Bey. Near Helwan

No. 10,935. Lavandula coronopifolia acc. Shawky Bey. Wady Hof.

No. 10,936 Iphiona mucronata (Forsk.) Ascho
Composite. Wady Hof. Low bush.

No. 10,937. Diplotaxis acc. Shawky Bey. Wady Hof.

Cairo, Egypt

No. 10,938. Nitraria retusa (Forsk.) Asch.
Wady Hof.

No. 10,939. Cleome arabica L.
Wady Hof.

From the hills near Wady Hof I had a fine view over the Nile Valley, and the desert country lying behind. Along the low-lying foothills one can trace the long line of the Pyramids - I can count 14 from those at Giza southwards to opposite Helwan. And how wonderfully the ones at Giza cut the skyline! And over the whole landscape hangs a thin as gauzy haze, giving the scene the elements of mystery and age necessary to satisfy the interest and awe of the traveler in the romantic past.

No. 10,939 a. Centaurea araneosa Boiss.

- The Egyptian Crow is a saucy bird. He walks about with a jaunty air as if to say, I am the only real sport in Egypt. Probably this bird is one of few that cares nothing about the high cost of living. He is a bit courageous too. I saw him drive a hawk (nearly twice his spread of wing) off the preserve in the Horticultural Garden at Giza.

- There are fine Oreodoxia regia palms in the Ezbikiyeh Gardens. Hefnawi wants to know why the trunk is spindle-shaped a little above the middle, or rather swollen above the middle so as to make it spindle-shaped unequally from bottom to top. There are also Doum Palms, branching dichotomously 2 or 3 times Hyphaene Thebaica, Del. Doum Palm - Gingerbread Tree.

- Anastatica hierochuntina L. Rose of Jericho. Given me by Mohamed Dvar. Collected by him on the Mokattam Hills. Cf. Bailey, Stand. Cycl. under Resurrection Plants.
- Sequoia gigantea growing here in Cairo. Several years old and doing well so far. — M. Dvar.*
- Cupressus arizonica — 14 ft. h., in Botanic Garden.
- Bignonia venusta — yellow tubular fls., flowering climber flowering profusely.
- Bougainvillea spectabilis, — purple-crimson
  " " var. lativba — brick-red-crimson
- Bombax malabaricus — red fls. — large, cor. rotate, in top of tree.
- Stereospermum acerifolium — Indian Tree — with large pod. (No. 10,779, q.v.)

* See pamphlet of introd. plants — Ministry of Agriculture.

- Museum of Antiquities. While most Egyptian figures of persons in ancient art are stiff or geometrical, the figures on the inside back of the throne chair of Tutankhamen are wonderfully artistic, that is smooth and flowing. I took another good look at the coffin of Tutankhamen. It is a truly amazing thing and very beautiful; in one hand the flail, the symbol of agricultural Egypt, in the other hand the shepherds crook, the symbol of his desert people. I shall long remember the wonderful life-like lion heads on the arms of King Tutankhamen's chair. In all the gear are shown the designs of things used in daily life. These ancient people also made models of a threshing floor, of cows and the milking process, of a company of 40 soldiers, of boats with their crews, company of heavy infantry (cont. p. 183).

Cairo, Egypt

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الدكتور عثمان محمد البنهاوي
طبيب بكتريولوجي بمعامل الصحة العمومية
بمصر

Met on the train at Benha, Egypt. He said that he is a cousin of Zufilcar Bey. (also in same compartm.
– N. Barouk, a merchant of Port Said, is

– Trifolium alexandrinum. Berseem is gathered and tied with its own stems into little sheaves twice as large as a rough scrubbing brush at home. Piled on a donkey's back it is peddled from door to door and sold in 5's or 10's as wanted. An inferior or light weight sheaf will be handed back just as in buying oranges. I saw this at a street door in Cairo on my way to Helwan.

March 19, 1926

Collection of Seed from Borg-el-Arab. Collected by Aziz Bichai Effendi. My nos. 10,940 to 10,971.

No. 10,940. Achillea santolina
No. 10,941.
No. 10,942.
No. 10,943.
No. 10,944. Pulicaria.
No. 10,945. Astragalus
No. 10,946.
No. 10,947.
No. 10,948. Trifolium
No. 10,949. Centaurea
No. 10,950. Trifolium
No. 10,951. Pisum sativum
No. 10,952.
No. 10,953.
No. 10,954.
No. 10,955.
No. 10,956. Plantago
No. 10,957. Astragalus
?Brachyceras

Cairo, Egypt

No. 10,958. Medicago blancheana
No. 10,959. Hippocrepis multisiliquosa
No. 10,960. Tetragonolobus purpureus
No. 10,961. Astragalus brachyceras
No. 10,962. Mesembryanthemum
No. 10,963. Trigonella
No. 10,964. Trigonella
No. 10,965. Pisum sativum
No. 10,966. Medicago
No. 10,967. Plantago
No. 10,968. Vicia calcaratā
No. 10,969. Medicago
No. 10,970. Chrysanthemum coronarium
No. 10,971. Lathyrus
No. 10,972.
Purchased in Cairo Mkt:
No. 10,973
Purchased in Cairo Mkt: